MYRMECIA

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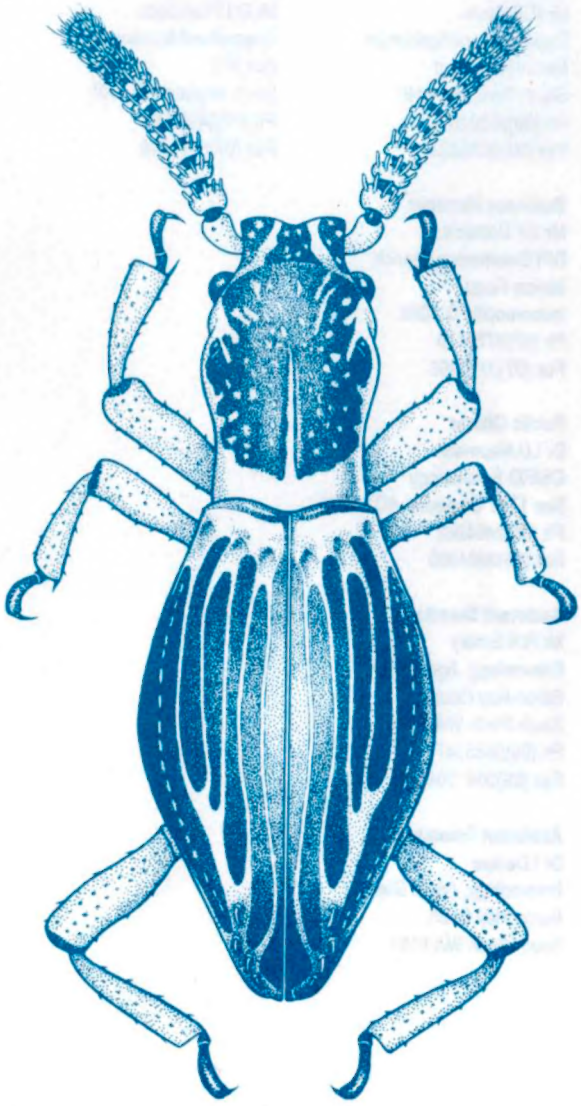

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THE COVER

The cover illustration for this year's ***Myrmecia*** features an illustration from the forthcoming new edition of "Insects of Australia". The illustration is by Ann Hastings, one of the CSIRO artists who have been working on the numerous new plates for the book. The species shown is *Sarothrias lawrencei* Lobl & Burkhardt, a member of the Jacobsoniidae, a family which appropriately enough had no described species from Australia at the time of the first edition. *Sarothrias lawrencei* is a tiny, rare species from the rainforests of North Queensland and has distinctive scale-like setae on the antennae and tracts of silvery tomentum on the body.

NOTICE

Statements made in ***Myrmecia*** do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

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MYRMECIA

CONTENTS

From the President 162
Executive Quarterly Report 163
Regional News
- Queensland 165
- Victoria 168
- Northern Territory 170
- Australian Capital Territory 172
- Western Australia 175
- South Australia 176
- Tasmania 178
- New South Wales 179

Overseas News
- Papua New Guinea 182
- New Zealand 183

News from Affiliated Societies
- Entomological Society of Queensland 183
- Entomological Society of New South Wales 183

News from Conservation Committee 184
Letter to the Editor 186
Obituaries
- J.W.Evans 187
- E.J.Martyn 189

Brief History of Aust.Ent.Soc 191
Archival Labels for Insect Collections 193
ABRS Grants for 1991 194
Coming Events 195
New Book 197
Invertebrate Diversity in Canopies-Comment 198
Reply to Ian Abbott 199
Smithsonian Awards 199
Publication for Sale 199

Copy Deadline for Next issue

Material for publication in the February 1991 issue of ***Myrmecia*** should be in the hands of the Editor at his address on the inside the front cover by **Friday, January 19**. Fax transmission may be used to (07)8461918 but care should be taken to ensure legibility and hard copy should be posted simultaneously. Material may be submitted on floppy disk. Any common word processor format is acceptable but "Microsoft WORD" is preferable.

EDITORIAL

Every two years we reproduce the full membership list in ***Myrmecia*** and this acts as a very convenient reference address list for Australian entomologists, most of whom are members. The two years has come around again so this will happen in the next issue (February, 1991). Included with this issue for all of you is your subscription form and it contains a space for you to update any details of your address. Please pay special attention to this because any changes you make will be incorporated in the printed address list which will apppear soon after.

Please think of ways you can help ***Myrmecia*** or ways you can use it to help yourself. We continually need details of new books, dates of coming conferences and workshops, news about entomologists and entomological happenings, photographs of insects and/or entomologists, research requests, etc.. Can you talk a local firm into running an advertisement? For entomological products or services ***Myrmecia*** achieves almost blanket coverage of the market. Communicate with your local Regional Councillor or directly with me.

This issue brings another year to a close. I'd like to wish you all the best for the Christmas season and the coming year.

Geoff MONTEITH
Myrmecia Editor

Myrmecia **Advertising rates**

	Single Issue	Four Issues (One Year)
Full Page	$60	$180
Half Page	$35	$105
Quarter Page	$24	$72

These rates apply to camera-ready copy supplied by the advertiser. Where this is not supplied a small additional charge may be made for the layout.

In addition, loose inserts and pamphlets supplied by the advertiser will be included in a mailout for $50 per item. The items should be of a size which will not project beyond the pages of ***Myrmecia.***

FROM THE PRESIDENT

In the last issue of ***Myrmecia***, I sought comment on the Society's awards and honours, and the criteria by which we judge them. I thank most sincerely all those former Presidents and present Councillors and committee members who have responded thoughtfully and patiently to my questions, and encourage anyone who has not yet expressed an opinion to do so. Needless to say, the comments received so far indicate a wide diversity of opinion, and the next phase will involve sorting these contrasting viewpoints for further discussion about our *modus operandi*.

The letters I have received include some comments that should be drawn to your attention now, so that you can start making plans. The first is the student award: we would still like to see more entries, and our success in obtaining them will depend largely on the active encouragement of our members who are on the staff of the various tertiary institutions. We have something like 250 postgraduate projects listed in our May and August issues, from something like 50 departments (or schools, etc.) in 21 institutions, and our listing doesn't even include all the Honours students. Now we might find 250 entries a bit hard to handle, but the usual tally is about 5. Surely there is a happy medium? Many of the students are not members of the Society or else are new to it, and may either not known about the awards or be diffident about entering. As a suggestion, perhaps our P/G list correspondents could each try to promote at least one entry from their own institutions. (By the way, Jenny Anderson, at the University of New South Wales, has very generously undertaken to compile the postgraduate list for the next few years). At present all research done during candidature for a degree is eligible for the student award, whether at honours or higher degree level. The level of experience of the student is taken into account in judging the written papers submitted. There may be some variation in the details of how we go about the judging and presentation of the student papers but there will be no fundamental differences for next year at least.

The second matter that deserves your attention is the Society's Research Grants Scheme. Again, we would like to see a larger number of applications. The grants are particularly suitable for people who do not have access to other sources of research funds. If you are looking for a few hundred dollars for a field trip or to visit another institution to learn a technique, or need a (rather small) piece of equipment, the Society may be able to help. There is a notice calling for applications in this ***Myrmecia***. I would be happy to give any advice I can to applicants.

With best wishes to all members.

Dinah HALES
President

Executive Quarterly Report

MEETINGS

The Executive met on 16 August and 20 September. The information from the July meeting, which was not included in the last Quarterly Report, is included here.

MEMBERSHIP

The Executive accepted 17 nominations for membership and elected 13 new members. The distribution of members as at September, 1990 is as follows:

Overseas	61	SA	67	QLD	186
NT	14	ACT	124	WA	51
NSW	171	TAS	31	VIC	109
Address Unknown		6			

Membership by category is:

Full	624	Student	107
Retired	58	Honorary	5
Joint	26		
TOTAL	820		

NEW MEMBERS

Elected 17 July, 1990

Mr G. BARDEN, Wesley College, University of Sydney, NSW 2008. Graeme is a BSc student in the School of Biological Sciences at the above university and is interested in biogeography and ecology and behaviour as a tool for population control.

Mrs E.S. KENTJONOWATI, BSc, Department of Zoology, La Trobe University, Bundoora, VIC 3083. Endang is a Masters student who is interested in the Psocoptera of Indonesia.

Dr T.J. KINGSTON, BA(Zool), PhD, Queen Victoria Museum and Art Gallery, TAS 7250. Tim is curator of zoology at the above museum. His main interest is in the ecology of beneficial soil organisms especially earthworms and dung beetles.

Mr B. JENKINS, BSc(Hons), Dept of Ecosystem Management, University of New England, Armidale, NSW 2351. Bert is a PhD student whose interests lie in insect ecology, insect plant interactions and evolutionary ecology.

Mr I. OLIVER, BSc(Hons), 4 Bimbimbie Place, Bayview, Sydney, NSW 2104. Ian is interested in seed dispersal by ants and their genetics.

Mr I. ROURKE, BSc(Hons), CSIRO Division of Entomology, Black Mountain, Canberra, ACT 2600. Ian is a PhD student who is studying characterisation of *Heliothis armiger*.

Mr J.F. WALLMAN, BSc, 3 West Terrace, Kensington Gardens, SA 5068. James is an Honours student at the University of Adelaide and is interested in insect ecology in ephemeral ecosystems and forensic entomology.

Mr G. WARREN, Entomology Section, Yanco Agricultural Institute, Yanco, NSW 2703. Glen's interests include biological control and acarology.

Ms T. WHARTON, 57 Peate Avenue, Glen Iris, VIC 3146. Trudi is a student at La Trobe University and is interested in plant-insect relationships.

Elected 16 August, 1990

Miss A. LEON, BAgSci(Hons), 8 Gregson Ave, New Town, TAS 7008. Anna is a Research Officer with the Forestry Commission of Tasmania and is interested in the biology and control of chrysomelids using *Bacillus thuringiensis*.

Elected 20 September, 1990

Mr B. CANDUSIO, Lot D5G Redburns Land RSD, Heathcote, VIC 3523. Bert is interested in the entomological fauna of central Victoria and is Curator of Entomology at the Bendigo College of Advanced Education.

Mr D.A.H. MURRAY, BSc, MSc, PO Box 102, Toowoomba, QLD 4350. David is an entomologist with the Queensland Department of Primary Industries and is interested in biocontrol. *Heliothis* ecology and Emerald field crop insect management.

Mr H. PARK, BSc(Agric), MSc(Agric), Curtin University of Technology, School of Biology, Kent Street, Bentley, WA 6102. Hyeancheal is a PhD student studying the biology of the harvester termite.

Changes of name, address or title

Dr G.R. ALLEN, formerly Mr.

Mr J.W.O. BALLARD, CSIRO Division of Entomology, GPO Box 1700, Canberra, ACT 2601.

Dr I.C. CAMPBELL, Centre of Water Studies, PO Box 197, East Caulfield, VIC 3145 (VIC).
Miss L.J. CHARLTON, 23 Hester Street, Langford, WA 6155.
Prof R.H. CROZIER, Department of Genetics and Human Variation, La Trobe University, Bundoora, VIC 3083 (NSW).
Mr G. DAVIES, 5 Gatton Street, Farrer, ACT 2601 (VIC).
Mr J.H. DOVE, Agricultural Consultants Ltd, 13 Loreto Convent Street, Curepipe Road, Mauritius.
Dr D. EWART, Department of Entomology, University of Hawaii, 3050 Maile Way, Honolulu HI 96822 (VIC).
Mr W.K. JORGENSEN, 9 St Amand Street, Seventeen Mile Rocks, QLD 4073 (QLD).
Prof R. KUMAR, Agriculture Protection Division, Department of Agriculture & Livestock, PO Box 2141, Boroko PNG (Nigeria).
Dr A.P. MACKEY, PO Box 694, Kenmore, QLD 4069 (QLD).
Mr D.M. REEVES, 10 Janet Court, Capalaba, QLD 4157 (QLD).
Mr G.B. SIMPSON, Entomology Branch, Department of Primary Industries, PO Box 102, Toowoomba, QLD 4350 (QLD).
Mr A. SPESSA, School of Information and Computing Science, Bond University, Gold Coast, QLD 4229 (?).
Dr J.T. St LEGER MOSS, 49 Willmington Street, Newmarket, QLD 4051 (QLD).
Dr E.J. WARRANT, Department of Zoology, University of Lund, Helgonavagen 3, S-22362, Lund, Sweden (ACT).
Miss R.L. WHYTE, 58 Carinya Street, Indooroopilly, QLD 4068 (QLD).
Dr D. YEATES, Tregeagle Road, Tregeagle via Lismore, NSW 2480 (WA).

The Executive accepted a resignation from K.G. Asher and it also recorded with regret the death of Dr J.W. Evans, an honorary member.

Missing Persons

The Society has lost contact with the following members. If anyone can help with their current address it would be appreciated if this can be sent to the Secretary.

P.M. IVES (formerly University of California)
M.R. NEWTON (formerly Bridgewater, S.A.)
N. NIKOLAKOPOULAS (formerly University of Melbourne)
A.J.E.ORIAN (formerly Kensington, NSW)
C.SATASOOK (formerly LaTrobe University)

Change to Office Bearers

Mr Bernie Franzmann has been nominated as third regional councillor for Queensland. Also, in view of the fact that Dr D. Yeates has resigned as Assistant Treasurer to go overseas, Dr I. Dadour has been appointed in his place. Dr Barry Moore has recently retired from the Editorial Board of the Journal and the Executive has expressed their appreciation for his long standing contribution.

Payment of Subscriptions

As of 20 September, there were 44 unfinancial members and 179 had not yet paid their 1990 subscriptions. All of these people are urged to rectify this situation as soon as possible since funds are needed to meet recurrent publication costs.

Regional News

QUEENSLAND

SOUTH EAST QUEENSLAND

Qld Forestry Service

Ross Wiley and John French have finished editing the "Annotated Bibliography of Forest Entomology in Australia to 1988". This was a project funded by the Australian Forestry Council and was published by the Queensland Forestry Service.

Ian Galloway from QDPI and Ross Wiley attended a meeting of the Plant Health Commission Standing Committee on Agriculture in Auckland from 3-7 Sept.

Queensland Institute of Medical Research

Dr Frederic Lardeux, ORSTOM and Institut Malarde, Papeete, Tahiti is visiting CSIRO Long Pocket and QIMR from September 29 - November 15. At QIMR he completed writing a manuscript with Brian Kay on broadscale release of *Mesocyclops* for *Aedes polynesiensis* control in land crab burrows. He will then accompany Michael Brown to Darnley Is. on the 5 November to complete a survey of present mosquito and copepod population levels following the release of *Mesocyclops aspericornis* (Crustacea: Copepoda) in July of this year. This return will be the first of a series of three monthly checks on the efficiency of this promising biological control agent.

Brian Kay attended the 10th meeting of the WHO/FAO/UNEP Panel of Experts on Environmental Management in Rome on September 4–11. After a 2 year term as Chairman, he now has been elected Chairman of the Steering Committee. The panel primarily aims at encouraging safe rural and urban development in relation to vector-borne disease.

University of Queensland, Entomology Department

Staff and students put together a display of research activities within the Department for "Expo Uni" on the 31 August and 1 September. This is 2 days every 4 years or so when the public are invited on campus. The theme was "Insects in our lives" and was composed of an insect zoo (a big hit with the kids), a biological control display, postgrad research activities, a selection of recent publications, computer pest management simulations and a range of pinned material demonstrating insect diversity. Full marks go to Martin Rice for organisation and everyone involved in setting-up and running displays.

The Department is very happy to see that Elizabeth Exley is on the mend and, although her strength is not enough for full-time attendance, she has been popping in occasionally. David Yeates visited the Department on the 8-12 October on his way to the American Museum of Natural History to undertake a 2 year postdoc. David will be attempting a cladistic analysis of bee-flies of the world and while here gave some lectures on cladistics.

Margaret Schneider attended the Numinbah Valley Field Study Centre to display some of the wonders of the insect world to primary school kids attending the south coast science camps.

Richard Russell from the Medical Entomology Unit at Westmead Hospital and Joan Bryan were among those who attended the funeral of David Lee held on 16 October in Brisbane. An obituary will appear in the next issue of ***Myrmecia***.

Joan Bryan and Des Foley attended the 6th Planning Meeting of the Collaborative Malaria Research Program between PNG Institute of Medical Research and various Australian Institutions held at Noosa Heads on the 8-9th October.

Entomological topics included advances in elucidating the *Anopheles punctulatus* complex in PNG and molecular entomological techniques for studying malaria transmission. Joan is off to the Solomon Islands from the end of Oct for teaching commitments.

Paul Walker submitted his PhD entitled "Pinkspotted bollworm dispersal from overwintering sites. Role of alternative host plants, life cycle and behaviour in cotton fields". Paul stopped off at Darwin for a week's R and R before travelling on to Nepal where he will be doing some trekking.

Myron Zalucki and Glynn Maynard went through inland Queensland on 15-21 September collecting lots of *Heliothis* and native bees, respectively.

Tony Clarke recently returned from a fruitful trip scouting SE Qld for Green vegetable bug on spring weeds. Tony was particularly interested in parasitism levels on these hosts.

Bill Ballard was in Brisbane to receive his PhD on "Behavioural and genetic variation in the taxon *Austrosimulium bancrofti* (Taylor) (Diptera: Simuliidae)"

which was only submitted in June. A few sore heads resulting from the celebrations were only consoled by the lament "it will never happen again"!

Visitors to the Department included Ken Walker from the Museum of Victoria primarily visiting family, Lesley Ballantyne from the Charles Sturt University for her revision of the Lampyridae, Steve Johnson from the Oonoonbah Veterinary Laboratory to talk butterflies and Fred McDonald from the University of Sydney.

CSIRO, Long Pocket

Wendy Forno will be carrying out a survey in Venezuela of biological control agents of *Mimosa pigra* and *Hyptis suaveolens*.

Tony Wright has just received authority to release the weevil, *Neochetina bruchi* against Water Hyacinth.

Tim Heard has started work with Wendy Forno's group. He will be researching insect/plant interactions relating to host specificity of insects in control of weeds.

Bob Sutherst returned from his annual consultancy to advise the FAO/DANIDA Regional Tick and Tick borne Disease Program for Africa.

Don Sands and Gus Macqueen visited Gladstone and gave a talk to the Yarwun/Targinnie Fruit and Vegetable Growers Association about prospects for control of fruit piercing moth. Don left for a 2 day lightning visit to Fiji in mid October to prepare cultures for release of a new encyrtid egg parasite, a biological control agent for the fruit piercing moth, *Othreis fullonia*. The scientist working with CSIRO Moth and Scale Insect Project in Western Samoa, Wilco Liebregts, will be in Brisbane to work with Don from 22 October –5 November.

Bureau of Sugar Experiment Stations

Mike Klein from the USDA Japanese beetle lab in Wooster, Ohio visited Peter Allsopp in Bundaberg after the Invertebrate Pathology Colloquium in Adelaide. Mike and Peter talked scarabs and discussed possible projects that they could undertake during Peter's visit to Wooster next year.

Peter Sampson migrated north for his annual soldier fly sampling but managed to pack his butterfly net and setting boards — just in case.

Dave Holdom attended the Workshop on scarab diseases in New Zealand and caught up with family. He then went on to Adelaide for the Invertebrate Pathology Colloquium.

DPI Entomology Branch

Frank Page (Applethorpe) reports that green mirids (*Taylorilygus pallidulus*) have invaded the Granite belt in huge numbers and are causing severe injury to stonefruit crops (catfacing). They are difficult to control as large numbers are infesting weeds and native hosts. Large numbers of apple dimpling bugs, Rutherglen bugs and native budworms have blown in on hot north westerly winds.

Neil Heather (Indooroopilly) attended the International Atomic Energy Agency Coordinated Research Group Project Meeting on Irradiation as a Quarantine Disinfestation Treatment at Kuala Lumpur in late August then travelled on to the working conference on Stored Products Entomology in Bordeaux and laboratory visits in UK. Neil's disinfestation program will receive three overseas visiting research workers for varying times up to 6 months - Shamsudin Osman from MARDI Malaysia, Chaosen Lin from the Plant Quarantine Service, Shenzhen, China and Mashi Kaneda and MAFF Yokohama Japan.

Tim Heard resigned from the Vapour Heat disinfestation program at Indooroopilly to join CSIRO. His place will be taken by Bob Corcoran as entomologist.

Bob Teakle and Chris Freebairn (Indooroopilly) attended the Invertebrate Pathology Colloquium in Adelaide where Chris gave two papers on insect parasitic nematodes. Post-conference visitors to Indooroopilly from the UK, USA and Brazil gave seminars on Baculoviruses for microbial control and area-wide pest management.

Bronwyn Kettle has started work with Les Robertson at Emerald to study the ecology and control of the black sunflower scarab which had plagued sunflower and sorghum growers in recent years on the Central Highlands. The beetles have also attacked chickpea, cotton and leucaena seedlings. The study is being funded by an Oilseeds Research Council grant.

Dr Jeff Aldrich of the USDA Insect Neurobiology and Hormone Laboratory, Beltsville, Maryland arrived in October to spend a six month sabbatical with Geoff Waite at the Maroochy Horticultural Research Station. Dr Aldrich will be working on the pheromones of fruitspotting bugs as well as a few other bug species.

Brad Scholz (Toowooba) presented a paper at the third

international *Trichogramma* and other egg parasitoid conference at San Antonio Texas USA. Current *Trichogramma* research in the US is directed at developing a completely artificial diet for rearing egg parasitoids and selecting suitable species and corn borer management in sweet corn. Brad also visited a *Trichogramma* mass rearing facility in Mexico and USDA facilities in Texas to talk about current biocontrol research. Upon return he was heard to say "Did yaraowll miss me?"

University of Queensland, Gatton Campus

Errol Hassan presented a workshop on the effectiveness of IPM of citrus, avocados, mangoes and low chill stone fruit to major fruit growers from in and around the Lockyer Valley, Darling Downs and Northern NSW. Errol received visits from Mr P. May, Area Manager (Asia/Middle East) from Incitec International and Dr P. Nkunika, Livingstone Museum (Entomology Department) from Zambia. Discussions centred around the 3V Strategy, and its application to overcome insecticide resistance problems in general vegetable insect pests in the Lockyer Valley.

Queensland Museum

Robert Raven joined Norman Platnick, arachnologist from the American Museum of Natural History, on a National Geographic funded spider-collecting trip to New Caledonia in August. Conditions were very dry and a period of "geographical embarrassment" marred the trip a little! Robert is expecting to return to New Caledonia again in December to join an ORSTOM expedition to Mt Panie, the highest peak on the island.

In conjunction Museum's Education Section, Geoff Monteith conducted a four day series of workshops for school teachers entitled "Insects in your Classroom" at the Museum in October. Assisting in the presentations were Heather Janetzki, Geoff Thompson, Sybil Monteith and Katie Hiller. The workshops were booked out weeks in advance and the enthusiasm of the teachers showed what a demand there is for basic ideas and techniques for using insects in school biology teaching. It is expected that the workshops will be repeated once or twice per year in future.

Visitors have included Fred McDonald, University of Sydney, to look at pentatomid bugs, and Lesley Ballantyne, Sturt University, studying fireflies. In early November Martin Baehr (Carabidae) and R.Gerstmeier (Cleridae), both from the Munich Museum, called in at the beginning of a month-long collecting trip in southern Queensland and northern NSW.

Mt Glorious Biological Centre

The Brisbane City Council runs Brisbane's new botanic gardens at Mt Coot-tha and one of its most successful enterprises has been its enormous tropical plant house built in the form of an eye-catching plastic dome. This year the Council decided to add free-flying butterflies to the dome as a permanent feature. Tony and Kate Hiller have the task of bringing this to reality and the scheduled opening by the Mayor, Sallyanne Atkinson, is on December 11. Watch this space for a further report in the next issue.

Des FOLEY & Bernie FRANZMANN
Regional Councillors

NORTH QUEENSLAND NEWS

Doctor Willougby Tun-lin used the Tropical Weeds Research Centre (TWRC) in Charters Towers during field studies for his post- doctorate degree on "Improved surveillance for dengue fever vector, *Aedes aegypti*, in northern Queensland". Willoughby is from Burma and is in his final year of studies through the University of Queensland Tropical Health Program. He was visited by Ian Fanning from QIMR in Brisbane in June.

Rachel McFadyen from Alan Fletcher Research Station and Marie Ablin from TWRC travelled to Rockhampton in early July to attend the Inaugural Queensland Noxious Weeds Workshop which was organised by the Queensland Weed Society. Rachel's cartoon presentation of the principles of biological control was one of the most original and entertaining speeches at the workshop.

Bruno Pinese spent about 3 weeks in September at the Tea Research Institute in Bandung, Java. Bruno is working on a proposal to import the braconid *Macrocentrus homonae*, a parasite of the avocado leafroller *Homona spargotis*. While there, he will also be looking for other potential biocontrol agents for this tortricid.

Harry Fay will be spending approximately 4 months to December 20 at the FAO/IAEA Seibersdorf laboratories outside of Vienna, Austria. He will be temporary supervisor of the medfly mass rearing research program at the Institute.

Harry worked at Seibersdorf previously between 1983/84.

Trevor Lambkin attended a tobacco research workers conference in Mareeba, giving a talk on insectide resistance in *Lasioderma*, which regularly infests stored tobacco, requiring treatment.

Tom Passlow, retired QLD DPI director of Entomology called into the Mareeba branch office to discuss entomology and entomologists with old workmates.

Jim Carpenter from Harvard in the USA spent two weeks in the Atherton Tablelands and adjacent coastal area in search of nests of vespids. He found 2 species of *Polistes* and 3 of *Rhopalidia* nesting in the Mareeba DPI's office grounds, his best haul since arriving in Australia.

David Larson, from Memorial University in Newfoundland, and his family arrived in Mareeba for a four month stay until mid- January, 1991. On sabbatical, Dave will be making ecological studies of local water beetles, mainly Dytiscidae before moving on to Madang, PNG for a further six months.

John Donaldson passed through Mareeba on the way to three weeks on Cape York Peninsula chasing butterflies and light trapping. Ross Storey will be spending two weeks in October light trapping in the Humpty Doo, NT area.

Ross STOREY
Regional Councillor

VICTORIA

Plant Research Institute, Burnley (DARA)

Jim Woodward and Bill Frost attended the "Vth International Colloquium on Invertebrate Pathology and Microbial Control" in Adelaide in August. In order to add to the ever-expanding cockroachery of Harley Rose (Sydney University) Jim returned via Silverton, NSW and collected specimens of the burrowing cockroach, *Macropanesthia kraussiana*.

Ilkka Havukkala from the Department of Zoology, University of Helsinki, Finland, (currently working at the Laboratory of Applied Microbiology, National Institute of Agrobiological Resources, Kannondai, Ibaraki, Japan), visited Burnley in September. He met with several entomologists and biotechnologists to discuss his work on the chitinases of *Bauveria bassiana*. He aims to incorporate these enzymes into transgenic plants to confer insect resistance.

Dr J.J. Frausen from the Institute for Floriculture, Aalsweer, visited Burnley and presented a seminar on the control of greenhouse pests with entomopathogenic fungi.

Mark Smith, Peter Ridland and Peter Cole are in the midst of a very busy *Heliothis punctigera* season in field peas in the northwest of the state. It is the heaviest infestation of the insect which we have had for several years.

While mountaineering in Kenya last month, Paul Horne called in at the CAB International Institute for Biological Control in Nairobi to discuss biocontrol of potato moth with Matthew Cock and Charles Kariuki.

During October, Andrew Calder (ANIC) visited the VAIAC at PRI and perused the elaterid collection.

Ballarat University College, Department of Biological and Chemical Sciences

Neil Hives and Patrick Prevett were amongst a group of staff and students who recently participated in a field trip to Loch Lilly Station, southwest NSW. As part of the fauna survey, ants were collected from several vegetation associations. These ants will contribute to an ongoing study of the Formicidae of the arid regions of northwestern Victoria and NSW.

La Trobe University, Department of Genetics and Human Variation

GROUP OF ARY HOFFMANN:

Ary Hoffman gave a paper on cytoplasmic incompatibility in *Drosophila* at the Invertebrate Pathology Colloquium in Adelaide in August. Ary's team is currently completing preliminary experiments on stress resistance in *Heliothis* and he will use the tests they have devised to characterise quantitative genetic variation among Australia *H. punctigera* populations next year. He is heading off to California in October for a field trip collecting flies for incompatibility experiments.

GROUP OF ROSS CROZIER:

Ross and Ching Crozier began officially at La Trobe in July (and are still house-hunting). There has since followed a period of unpacking of boxes and buying of equipment. Things still have a way to go, but the polymerase chain reaction works in the new lab and the sequencing gels run OK.

Lars Jermiin arrived from Denmark to take up postgrad work with Ross at about the same time as the latter arrived

in Melbourne. Lars will be using sequence analyses to test hypotheses on the major features of ant evolution, and of major biogeographic shifts. So far, Lars has begun to learn the basics of molecular biology and is a little spaced out over the myrmecodiversity of Australian environments.

Stella Koulianos obtained her BSc(Hons) degree from UNSW on sequence variation in Australian honeybee strains, presenting her work only days before the Croziers packed up and headed south. No good phylogeny of Australian strains was produced because of low variability; two alleles were found in all with ca. 800,000 years of separation between them under "standard" rates of mitochondrial DNA evolution. She has now also moved to Melbourne from Sydney, and will continue her study extending it to take in more variable regions of mtDNA, and expanding it into DNA fingerprinting. At present she is working as a technician in the lab.

Penny Kukuk rejoined the lab a month ago, and has already set up her own field station near her field site at Cobbobonee, where she, Michael Schwarz and Megan Vogel will study the competitive effects of honeybees on native bees. Penny also attended the recent congress of the International Union for the Society of Social Insects held in Bangalore, attracting envy from other members of the lab.

Ching and Ross are pushing on with the sequencing of honeybee mtDNA, with a large backlog of sequence to be published. Ross wistfully intends to return to completing his book with Pekka Pamilo on social insect sex allocation, and hopes to overcome the constraints of competing time demands, such as due to the department headship, before too long.

Risa Rosenberg, formerly a UNSW postdoc but now a La Trobe postdoc, is still travelling overseas, and is believed to be currently in Sweden; on her return to La Trobe she will continue with her studies on butterfly ecological genetics as well as other insect-related projects.

La Trobe University, Department of Zoology

The Department of Zoology is back to full strength with the return of Tim New, Seamus Ward and Evan Schmidt from the 1990 Krakatau expedition, Michael Schwarz and Tish Silberbauer from India and Ian Thornton from OSP. Apart from joining up with the Krakatau expedition, Ian also attended the 4th International Congress of Systematics and Evolutionary Biology held at the University of Maryland, he collected in north Borneo and also visited Surtsey. Michael and Tish attended the 11th International Congress of the IUSSI (International Union for the Study of Social Insects) and gave a number of talks. Tish spoke on her recent Honours results and directions for her PhD and Michael outlined some of his recent findings on sex allocation and sociality in *Exoneura bicolor*. Michael also spent some time after the conference collecting bees in southern India.

Michael Schwarz and Penny Kukuk have received a large grant from the World Wildlife Fund for Nature (Australia) to assess the possible competition between introduced and native bee fauna. The project, which starts in August 1990, will be based at Cobbobonee State Forest in south-west Victoria, where a number of other native bee research projects are currently underway.

While visiting Melbourne, Dr J.J. Frausen from the Institute for Floriculture, Aalsweer, has been discussing her work on the use of entomopathogenic fungi for the control of greenhouse pests with Seamus Ward. She also gave a seminar at PRI and visited KTRI, Frankston.

Grant Farrell will be leaving La Trobe in late November to take up a position with CSIRO working on the *Mimosa* biological control program in Darwin. This has caused much wailing and gnashing of teeth by the PC users in the department as they will now have to actually consult their software manuals for help when they trash their files or hard disks.

Monash University, Department of Genetics and Developmental Biology

The work on *Heliothis* mtDNA variation is off to a fine start with the help of Ingrid Kovacs, an Honours student this year. Also during Honours, Linda Adams has detected an interesting association between *Drosophila* resistance to desiccation and "heat-shock" protein gene variants. She hopes to move to Veterinary Science at Melbourne University next year for graduate studies on sheep genetics. John Tomasov, who was awarded a PhD from La Trobe this year for his work on genetic variation in the St John's wort leaf beetle, has launched into a study of variation in the giant earthworm with an Honours student, Rosa Grov.

Congratulations to Jenny Ross who has been awarded a research fellowship to work with Doug Cavener's group at Vanderbitt in Tennessee on sex determination pathways and their relationship to the *Drosophila* glucose dehydrogenase

gene. Her work here on the sequencing and characterisation of a *Drosophila* mitochondrial enzyme gene thought to be important in fat and alcohol metabolism, is coming together nicely. Steve McKechnie and Jenny spoke about their work with this enzyme system at the September Dipteran Conference at Corowa.

Monash University, Department of Psychology

Stella Crossley continued her studies on the genetic basis and organisation of *Drosophila* courtship sounds and behaviour as well as supervising research on children's behaviour (not the only entomologist who works on such different organisms: Kevin Connolly and the late Margaret Bastock Manning did the same). The year is developing into a very busy one for Stella, with; collaborative research on insect acoustics with Henny Bennet- Clark visiting from Oxford University Department of Zoology; an overseas visit to present two papers on insect behaviour to the Behaviour Genetics Meeting in Aussois, France, followed by two weeks in Professor M-J Jallon's laboratory, CNRS Gif-sur-Yvette, learning about insect pheromones as well as lecturing there on *Drosophila* acoustics; Deputy Head and then Acting Head of the Department of Psychology at Monash (Clayton campus), a much heavier chore than an earlier six-month stint as Acting Head in 1984, the difference being the mass of paperwork resulting from recent mergers, affiliations, etc. Interestingly, Stella's recent publication "The Place of Insect Behaviour Genetics in Psychology with a Special Emphasis on Teaching" has attracted wide interest, mainly it seems, because of the problems of devising ethically acceptable animal behaviour practicals using larger animals.

Monash University, Department of Ecology and Evolutionary Biology (ex - Botany and Zoology)

The department has a brand new name but the work continues as ever. Dr David Walter from Orlando, Florida has been appointed as an ARC Research Fellow to work on insect-plant relationships with Dennis O'Dowd. His introductory seminar is entitled "Mites: the Secret of the Universe (or the Universe Explained)".

Brian Roberts has had to decline the IDP offer for teaching in Indonesia and will be writing papers at home instead. Brian and Kathy Lefevre were pleased to receive a Monash-CSIRO collaborative grant to study the hormonal development in the Australian sheep blowfly, *Lucilia cuprina*. This work will be a collaboration with Peter Smith and Mike Lacey of CSIRO Division of Entomology, Canberra.

The endocrinology team is now all geared up on the control of reproduction and development in *Lucilia* i.e. Brian, Kathy, Mark Collier, Edi Basuki and Fiona Clissold. Julie-Anne Roberts has joined recently with her Honours work on the preadult development of *Lucilia*. Jules has accomplished a marathon of sample collection: Congratulations! Sarita Kulkarni is progressing with her MSc on the development of *Epiphyas postvittana*.

Dr R.K. Saini from ICIPE, Nairobi, Kenya, visited the department in August and gave an interesting seminar on "Odour Attractants for Tsetse Flies".

Janet HORNE
Regional Councillor

NORTHERN TERRITORY

CSIRO — Division of Wildlife and Ecology

In October Alan Andersen attended the Ecological Society of Australia meeting held in Melbourne, and presented a paper titled "The regulation of diversity by dominant species in Australian ant communities". The meeting was notable for the number of presentations on invertebrates - ants and crabs held the limelight.

Alan is planning collaborative work with Dr Ashwath of the OSS Revegetation Section - examining the role of ants in mine site rehabilitation.

Mr Ani Patel, a graduate student of Prof E.O. Wilson (Harvard University), is currently visiting for six weeks to examine ideas for a PhD project on ant community structure.

Alan attended the recent Resource Assessment Commission hearings in Darwin to answer questions on the Australian Entomological Society submission on mining in the Conservation Zone of Kakadu National Park.

NT Health — Medical Entomology Branch

The Branch has just completed the annual drain maintenance and upgrading program around Darwin, keeping Paul Barker-Hudson and Graeme Dobson fully occupied. The first high tides of this dry season have not resulted in any major mosquito breeding, vindicating the new drain works.

The Branch has just confirmed the finding by the Australian Quarantine Services of *Aedes albopictus* larvae

imported into Darwin. This exotic dengue vector has previously been intercepted arriving in Darwin. This time it was in a spare motor vehicle tyre attached to a vehicle. The Branch has increased surveillance activities around the port area and is working with the Australian Quarantine Service to ensure that this mosquito is excluded from Australia.

The DNA probes for the identification of the three sibling species of *Anopheles farauti* in Australia have now been fully sequenced by the Menzies School of Health Research. These probes are very specific and anybody interested in obtaining them can contact Peter Whelan on (089) 228 333.

Gwenda Hayes has been up to her ears in flies with the Branch's investigation into the newly introduced wheelie bins. A major fly trapping program has just been completed and all the flies identified. The only problem now is to clear the lab of all residual smells.

Paul Barker-Hudson has unfortunately just resigned. The Branch is collectively thankful for Paul's contribution and wish him well with his new direction. Advertisements for the vacancy should appear soon in national papers.

Peter Whelan recently attended the October 1990 Australian Conference on Tropical Health and Nutrition in Brisbane. He co-authored a paper with Bart Currie outlining the continuing receptivity and vulnerability of Northern Australia to malaria reintroduction.

Office of the Supervising Scientist — Alligator Rivers Research Institute

The dry season grinds on here in Jabiru. Peter Dostine is making occasional forays away from air conditioned comfort to collect dragonfly larvae to be reared and then described by consultant Mr John Hawking of the Murray-Darling Freshwater Research Centre at Albury. Peter Cranston of ANIC paid a brief visit to lift the veil of secrecy from the local chironomids. Dr Greg Rippon complains of the burden of paper work while acting section head of Aquatic Toxicology. Meanwhile, the dry season grinds on ...

DPIF — Entomology Section

The horticultural production season continues to keep everyone on their toes. The cucurbit and vegetable side of things is slowly winding down with the increase in temperature and humidity, only hardened growers are still planting. Fruiting of tree crops will provide most challenges over the next couple of months.

Stuart Smith and Deanna Chin have finished laboratory trials to determine thermal mortality of naked fruit fly larvae. They will soon commence this season's follow up hot water mango disinfestation trials. Over 30,000 larvae will be tested with the aim of declaring the dipping technique effective for quarantine purposes. They also commenced preliminary trials for cold treatment of fruit flies in carambolas.

A mango inflorescence observation trial is being undertaken by Debbie Van and Michael Neal to record abundance of insects flowering. Initial results indicate that caterpillar numbers do not greatly affect future fruit set.

A survey of bruchids of mungbeans and other legumes is underway. To date no bruchids have been reared from samples collected recently in the NT — although an interception by AQS of mungbeans from Singapore contained *Callosobruchus maculatus*.

Thrips palmi, a pest of cucurbits and other vegetables which was only detected last season in the NT, has had fluctuating effects this season. The spread has not been as wide as feared, however growers with *T. palmi* have found it very difficult to control.

Visitors to the section included Ken Houston of QDPI, who examined the beetle and mite collections. Stuart Smith's dedication to fruit fly research forced him to endure a two week sojourn in Mauritius.

DPIF — Agricultural Quarantine Section

Whilst on leave in June and July, Ted Fenner visited the British Natural History Museum to examine milkweed butterflies. Ted spent a week in August on East Timor with Jason Weintraub of Cornell University and Donat Agosti from CSIRO Canberra, pursuing ants and butterflies. It was extremely hard to find undisturbed forest in accessible areas. Following the resignation of Allan Allwood, Ted is now the Chief Quarantine Officer (Plants) for the NT.

DPIF — Weeds Section

Recently Colin Wilson attended the 9th Australian Weeds Conference and presented a paper (jointly authored with Grant Flanagan) titled "Establishment and spread of *Neurostrata gunniella* on *Mimosa pigra* in the NT". While on *Neurostrata* - Grant Flanagan reports finding a 20 cm high *Mimosa* seedling with a *Neorostrata* larva 160 kms from the nearest release site!

The section has begun releasing the *Parkinsonia* mirid

bug *Rhinacloa* on Elizabeth Downs station in the Katherine region and towards the WA border. Releases of the chrysomelid *Calligrapha pantherina* on irrigated *Sida* are proving successful. The section has also achieved some success with a new method of rearing the clearwing moth *Carmenta mimosae* — a *Mimosa* stem borer. Success is also anticipated with the filling of the technical officer position - following recent interviews.

Peter DOSTINE
Regional Councillor

AUSTRALIAN CAPITAL TERRITORY

CSIRO Division of Entomology

The biological control of weeds section has been awarded the inaugural Eureka Prize for Environmental Research. This prize was awarded by the Australian Museum, the ABC and POL Publishing. The group was honoured for its outstanding contribution to the safe resolution of environmental problems caused when weed species replace beneficial native and crop species. It recognised the group's strong commitment to basic research leading to a comprehensive understanding of the mechanisms which operate in plant-herbivore interactions. Delfosse accepted the award on behalf of the section. Congratulations!

Jim Cullen recently spent 2 weeks in Montpelier, France, starting up a new program on biological control of horehound (*Marrubium vulgare*), reviewing existing problems and attending a meeting on FAO guidelines on introduction of biological control agents. He then attended a conference at Aberystwyth, UK on exploitation of micro-organisms in applied biology. He finished the trip with a week in South Africa coinciding with the arrival of Penny Edwards and the departure of John Scott, who is returning to his home state of WA, where he will continue to work on *Emex*, as well as new projects.

Jim Cullen, Delfosse, Tim Woodburn and Andy Walker have been out on the hustings, giving talks on biological control of weeds as part of the NSW Dept Agriculture weeds awareness week.

Jonathan Banks, Jim Desmarchelier, Jan van Graver, Bob Winks, Peter Annis and Jane Wright from the Stored Grain Research Laboratory attended the Fifth International Working Conference on Stored Product Protection in Bordeaux, France. Jane Wright travelled by way of a conference on biodeterioration and biodegradation in Canada where she presented an invited paper on detection of insects in grain. Bob Winks also went to Germany, the UK and the USA for discussions on fumigants and the commercialisation of SIROFLO. Jan van Graver attended the annual ASEAN post harvest meeting in Brunei and visited labs in Germany, the Netherlands, the UK and India on the trip. Peter Annis is on 3 months long service leave, travelling about Europe, and attending the odd conference, Bruce Champ of ACIAR also attended the Bordeaux conference and was so caught up in the enthusiasm of the event that he's now the convenor for the next meeting, to be held in Australia in 1994.

The Minister for Primary Industries and Energy, John Kerin, presented a cheque to the stored Grain Research Laboratory for an extension to be built for the engineering component of the section, currently housed in Melbourne. The money came from the now defuct Tasmanian Wheat Freight Fund. The function was attended by the members of the Stored Grain Research Laboratory Council and Management Committee, the National Farmers' Federation and the new Grains Research and Development Corporation.

Joanne Daly is on maternity leave, having borne the lovely Louise in September. In her absence, Jenny Fisk is holding the fort admirably.

Penny Edwards has left Canberra to replace John Scott in Cape Town, South Africa, working on biological control of weeds. Penny was in Africa a few years ago, working on dung beetles at that time.

Brian Fletcher is overseas at a meeting of the IOBC world group on fruit flies in Guatemala.

Bill Vogt went to the USDA in Washington, DC as a member of the Australian National Management Committee on Screwworm to negotiate sharing of technology associated with eradication of screwworm. Full access to all USA technology and knowledge was agreed. No wonder he's acting chief while Max Whitten is away for 6 weeks.

Max Whitten has gone to Beijing in his capacity as secretary to the International Congresses to discuss preparation for the 1992 Congress. He will continue on to assist in a review of the FAO program for development and application of integrated pest control in rice in south and south-east Asia. In his role as champion of entomology and research he has spoken recently to the Australian Museum

Society on "Biodiversity: what to conserve and why", to the inaugural seminar of the new Australian Society of Horticultural Science on "Horticultural professionals and the environmental debate" and to the Public Accounts Committee on the inquiry into research and development.

Wendy Milne, Paul Wellings and Dick Hughes recently attended and presented papers at a conference at Oklahoma State University called "aphid/plant interactions: populations to molecules". Wendy then visited Kiel, Germany to talk about *Aphelinus* research while Paul did Russian wheat aphid research on Montpelier, France. They then contributed to the fourth meeting of the IOBC working group on the ecology of aphidophaga in Godollo, Hungary, where they caught up with Victor Eastop who visited most parts of Australia last year.

When Wendy Milne wasn't attending conferences, she and Roger Delves were driving in and around floods to get to their field sites for studies on aphids and cereals. Dick and Anne Hughes made the first releases of *Aphelinus varipes*. They released both German and Russian strains and hope they'll establish on various species of *Rhopalosiphum* while awaiting the arrival of the Russian wheat aphid.

Getting ready for Biota 90, the open day for CSIRO, took some effort, but everyone pitched in and we had a very successful event. The entomology effort was coordinated by Ray McInnes and Russell Moran. The illustrators, Sandy Smith and Chris Hunt, burned the midnight oil to prepare all the new display boards in time and then spent the weekend painting insects on little faces. George Bornemissa's World of Beetles exhibit has a great hit with the public, as were the spiders (as usual). A special exhibit of insect tapestry/sculptures by Annemieke Mein from Sale, Victoria was quite a delight.

Richard Milner spent 3 weeks in Myanmar (Burma) in July on an FAO consultancy to advise on the possible use of green muscardine fungus, *Metarhizium anisopliae*, for control of scarabs in peanut crops. He surveyed 31 fields and found 6 pathogens and 1 parasite, all previously unknown. Potentially useful isolates of *Metarhizium* were found and a 4 year research program established, which will involve regular interchange of scientists between Myanmar and Australia.

The termite group has been busy. Tony Watson and Michael Lenz presented papers in August at the 11th International Congress of the International Union for the Study of Social Insects in Bangalore, India. Michael stopped off in Thailand on the way home to look at some termite control problems. The group has welcomed Dr Joe Mauldin from the USDA Forestry Service in Mississippi, who will work there for 3 months looking for alternatives to organochlorines in baits for termite control. Miss Mercy Gichora from Kenya has started her MSc (ANU) research on the association of termites and wood decay fungi.

Dr Chris Sanders from the Department of Forestry in Canada has joined the pheromone group for 9 months to work on the mechanisms of mating disruption. He has worked for many years on the spruce budworm and the potential use of pheromones for its control.

Visitors to the Division included Dr Joanne Fransen from the Institute of Floriculture, Aalsmeer, The Netherlands and Dr Clive Jones from the Institute of Ecosystem Studies in the New York Botanical Garden. Dr David Greenwood, DSIR New Zealand, visited Phil Spradbury and gave a seminar on management of bumble bees for pollination. The pathology section was graced with a plethora of visitors in advance of the pathology congress in Adelaide. It seems anyone who's anyone was there!

Australian Plague Locust Commission

The commission is on the move (like locusts?). Gordon Hooper recently travelled to Rome for an FAO meeting on desert locusts. Most of the staff of the commission went to the annual meeting of field staff in Longreach in August and about half of the crew are presently in southwest Queensland controlling locusts. Graeme Hamilton reports that it looks to be a big locust season coming, with all the rain we've had to set them off.

Jane WRIGHT
Regional Councillor

CSIRO Australian National Insect Collection

The most notable event of the past quarter has been the convening in Canberra of the world's cladists in the largest Coopers and Cladists meeting yet held. Ebbe Nielsen and Robert Raven were amongst the organisers of the gathering, held under the auspices of the Willi Hennig Society, whose 9th International Meeting it was. Overseas entomologists and arachnologists in attendance included Danes Niels Kristensen and Nils Moller Anderson (both from the Zoological Museum, Copenhagen), Norman Platnick, Charles

Griswold and Ward Wheeler (American Museum), Jim Carpenter (Harvard), Jyrki Muona (Oulu, Finland), Ian Kitching (British Museum), Annette Walker (CAB, London), John Weaver (New Hampshire), Tom Henry and Sue Weller (Washington) and the peripatetic Jason Weintraub. Jason was on a flying visit between Indonesia and Japan and scarcely recognised Australia before departing — most other visitors spent time collecting and touring elsewhere on the continent or New Caledonia (of which no doubt more elsewhere in this edition) before returning to the northern hemisphere. Virtually all the overseas entomologists gave papers or presented posters, as did "locals" Gerry Cassis, Peter McQuillan, Ross Crozier, David Yeates, Mark Harvey and Andy Austin. A somewhat depleted New Zealand representation included Canterbury arachnologist Allan Rodrigo, coleopterist Rowan Emberson and "head-in-the-lion's-mouth" panbiogeographer/aquatic entomologist Ian Henderson (Massey University).

Apart from the sessions on molecular data, phylogeny and evolutionary studies, austral biogeography, systematics and evolution and parsimony analyses, there were valuable sessions on computing software. Canberrans were doubly fortunate to have additionally two full day workshops on the use of the "new" PAUP, by Dave Swofford, and Henning86, by Steve Farris, both organised under the joint auspices of the Divisions of Entomology and Plant Industry. Both presenters gave remarkably lucid explanations of what their programs could (and couldn't) do with our favourite data sets. Numerous sales of both programs (at US$50) were made as systematists followed Norm Platnick's conclusion that both were essential tools of our trade.

Several of our overseas colleagues spent time in the ANIC around the meeting —Niels Kristensen didn't spend all his time looking at the newly arrived proofs of his "Insects of Australia" chapter but also looked at the lophocoronid moths with Ebbe. Two hemipterists perused the collections: Nils Moller Anderson studied gerrids and *Halovelia* and Tom Henry examined the Berytidae. Jim Carpenter loudly bandied insults with hymenopterists and non-rigorous cladists over the wasp cabinets and David Yeates shipped our beeflies to the American Museum of Natural History. Two longer stay visitors have become resident in the past few months. ABRS funded ant researcher Steve Shattuck is working with *Iridomyrmex* and has already given us a seminar on his past and prospective studies. Australian ant systematics received a further boost with the arrival of Donat Agosti, from Switzerland via the British Museum and a field trip in Timor with globe-trotting Jason Weintraub. Don Edward (University of Western Australia) continued an interrupted sabbatical to work on more Gondawan midges with Peter Cranston.

The Hennig meeting overlapped with the Dipterists' meeting held in Bratislava, Czechoslovakia. Don Colless chose to visit Europe, as did many Australian Dipterists, and reported a mixed bag of science but good social side. Also in Europe during the northern summer were Penny Gullan and John Vranjic (ANU Botany) who attended the Coccidology meeting in Krakow, Poland. The official title seems to have been the "International Symposium of Scale Insect Studies" or IS(S)IS, goddess of fertility and beauty — the former seems more appropriate than the latter to this beholder. Ken Key also has been travelling — to the Museum of Victoria, then on to the Waite, Adelaide Museum and Department of Agriculture, Adelaide in search of *Phaulacridium*. Dave Rentz notes the absence of cladist Orthopterists, from evidence of the Hennig meeting and perusal of the "Tettigoniidae - biology, systematics and ecology", newly published as a tribute to David Ragge, edited by Dave and Win Bailey, published "from a garage". While on the topic of publications, rapidity, quality, availability of machine readable text, monkey wrenches etc, "Insects of Australia" proofs are being read in preparation for a publishing date of "mid–1991" but everyone tells me not to quote them on this.

If bureaucratic problems allow, Alexander Kirejtschuk (Zoological Institute, Leningrad) will be with us for four months, studying and collecting Australian Nitidulidae with John Lawrence and Andrew Calder. Jo Berry from Plant Protection, DSIR, New Zealand is soon to commence a PhD on pteromalid wasp systematics, co- supervised by Penny Gullan and Ian Naumann, housed in the Division of Entomology. Penny Gullan and her systematic students from ANU will be temporarily relocating to ANIC while the Zoology Department is refurbished, in preparation for its metamorphosis into the Division of Botany and Zoology (or BoZo).

Leigh Miller presented the first results of his systematic studies of termite guts at a postgraduate seminar and Nick Drayson (Chironomidae) and Ting Kui (*Pulvinaria* scales) are soon to give seminars on the progress of their postgraduate studies. Alison Roach has now seen live examples of her study group — *Anthrenocerus* (Dermestidae) — from

flowering *Acacia* 350 kms west of Canberra in an entomoscenic tour organised by Chris Reid.

Pete CRANSTON
Regional Councillor

WESTERN AUSTRALIA

Conservation and Land Management

WOODVALE:

Gordon Friend and David Mitchell are continuing post-fire monitoring of invertebrates at Tutanning and Durokoppin Nature Reserves. Lynne Hayles, formerly from CSIRO, is sorting these samples and analysing the data.

Stuart Little's Honours Thesis (Curtin University) on invertebrates inhabiting Kwongan vegetation at Tutanning is in the process of being written as a CALM Technical Report, emphasising the relationship between species richness, habitat structure, floristics and fire history. New species of *Heteronyx* continue to turn up from the Stirling Ranges. So far 19 species have been trapped, and 13 of these are new. Forty-one *Heteronyx* spp have been sent to Ev Britton and 28 are recognised as new. This is in addition to the various *Liparetrus* and *Colpochila* spp that have been collected and are also recognised as new species. Given that the study sites are in such a small area of the national park, it makes one wonder what else is waiting to be discovered. Cicindelids are continuing to raise their pronotums. *Nickerlea sloanei* was caught in Watheroo National Park by Sandy Griffin in March, keeping in line with the predictions on their activity period from the Durokoppin series. Janet Gardner and David Pearson collected a series of *Nickerlea* sp. nr. *distypsideroides* at Queen Victoria Springs Nat. Res., also in the predicted late summer activity period. If this is *distypsideroides* it is the first collection of males, and only the second known collection of this species in existence.

Graham Hall visited various molecular research labs in the eastern states in August. Whilst in the area he attended the Hennig Meeting in Canberra, and presented Ev Britton with the latest offering of melolonthines.

MANJIMUP:

Janet Farr and her team have spent the last few months conducting various training sessions, including travelling to CALM Districts in the southern and central regions to train operational staff in gum leaf skeletoniser recognition. Since the decline of the *Uraba lugens* outbreak, populations have been sparse and patchy. Therefore a systematic survey is being conducted in order to locate these patches.

COMO:

Ian Abbott helped prepare a manual on pest insects of *Eucalyptus globulus* and pine plantations. Lesmurdie, a Hills suburb of Perth, is currently experiencing an outbreak of autumn gum moth of *Eucalyptus calophylla* (marri).

Department of Agriculture

Plenty of locusts over here! Kevin Walden, from the Geraldton office, reports that outbreaks are quite heavy in certain areas, as was predicted in April. The Agriculture Protection Board did a survey of adults in April, and from this information, together with data on female fecundity and egg survival they could predict when, where and how many eggs would hatch. Hatching has been going on since halfway through August. A control campaign is underway by conducting farmer survey on locust numbers. Using this data the APB can monitor populations and provide farmers with the appropriate quantities of insecticides.

Similar predictions were done on *Heliothis* outbreaks. Last year there was a major outbreak in lupin crops, which was predicted from data of the previous generation. This year there is only a minor outbreak near the Geraldton region.

Stewart Learmonth, from Manjimup, found bostrichid beetles, *Xylopsocus gibbicoliis*, boring stems of grapevines in a vineyard in the Margaret River area. The beetles seem to concentrate on the more vigorous vines, resulting in large amounts of sap exuding from the holes. Up to now the beetles have mainly attacked acacias.

Back at the main office things have been a bit quiet lately. Many entomologists are either on leave or on overseas trips. David Yeates has left for New York and is stopping over in Hawaii and Los Angeles to meet some other bee-fly people. Good luck, Dave. We hope to see you back in a couple of years. Francis deLima, who is in charge of the fresh fruit disinfestation programme has also taken over David's job as quarantine entomologist. Ian Dadour returned from the WAITE Institute and quickly left again. He went to New York to attend the "Evolution: from molecules to culture" Conference, in the Cold Spring Harbour Labs,

followed by a brief visit to the University of Toronto where he gave a paper on dung beetles in WA.

Francoise Berlandier and Bronwyn Houdling are sampling aphids in the south-west of WA, concentrating on potato growing areas. They hope to gather some information on elusive native aphids.

WA Museum

Terry Houston is on long service leave, but his TO, Brian Hanich, reports that the Museum had a visit from Ian Common early in October, who is doing some collecting in the south-west and also from Shelley Barker who sorted some buprestids from casuarinas. The Insect Study Group held an 'Insects of Kings Park' display at the wildflower show that was held recently. The display was very successful and attracted a lot of interest from the public.

Curtin University

The School of Biology is in the midst of great celebrations. Tony Postle has just been awarded his PhD. Congratulations Tony! Jonathan Majer hopes that the laboratory can now be emptied of Tony's specimens in order to make way for the *Drepanotermes* nests that Hyan-Cheal Park is studying. Maybe Park can train his termites to help get rid of all those litter samples that belong to Tony.

Dr Donat Agosti, from Switzerland, has been working in the lab on Jon's Melophorini ant collections. Donat is currently in the Pilbara region looking for additional material.

Agriculture Protection Board

Peter Davis, John van Schagen and their team are in the process of winding up their ecological studies on Argentine ants. Four seasons of ant sampling in many areas of south-west and Perth's metro area has confirmed that Argentine ants displace native ants in all areas where they occur. So far no Argies have been found in areas of undisturbed native vegetation, but with the way they are spreading this could well happen in the near future.

CSIRO

Winter in Perth marks the annual migration of visitors escaping from the cold of Canberra. Max Whitten, Chief of the Division, spent a week here meeting with the beekeepers and discussing research projects. Ian Common and Norm White dropped in for a brief visit and Bill Vogt was in Perth for the Plant Institute meeting. Bob Lewis spent a week out in the field doing some collecting and Richard Milner was here to discuss the use of pathogens in the control of potato pests and have a preliminary look at a fungus found in red-legged earth mites. With the winding down of the winter sampling in the red-legged earth mite project, sampling for the pest of potato programme is about to start. The team welcomes John Scott who is about to join after working overseas.

John VAN SCHAGEN
Regional Councillor

SOUTH AUSTRALIA

South Australian Museum

Eric Matthews, who is working on tenebrionid systematics and his guide to genera of South Australian beetles, is now in charge of the Entomology section. Gordon Gross, who retired recently and is coming in a couple of days per week (always Fridays, to partake of a lunchtime beverage), has been appointed as Emeritus curator, a position newly created by the Museum Board.

David Lee was away in August and September. He gave a paper on the systematics of higher oribate mites at the 8th International Congress of Acarology in Czechoslovakia, and 'picked people's brains' and studied collections in London, Budapest, Copenhagen, Ottawa, Syracuse, Columbus (Ohio) and Chicago.

Ken Key (ANIC) called in to examine *Phaulacridium* and its allies, Terry Houston (Western Australian museum) to examine bees, and Scott Miller (Bishop Museum, Hawaii) whilst he was in Adelaide to pick up the Lepidoptera borrowed by the late Joe Szent-Ivany and to discuss with Joe's widow Maria arrangements for publishing his *magnum opus* on economic insects of New Guinea.

Flinders University —School of Biological Sciences

Dennis Thiele from Bioenterprises, Tasmania visited the School in August and gave an interesting seminar on the use of nematodes as biological control agents against soil insect pests.

Duncan Mackay and Molly Whalen attended the meetings of the Ecological Society in Melbourne this September. Duncan gave what was one of many talks concerning ants

that were heard at the meetings. Duncan discussed effects of canopy ants on herbivory levels of a mallee eucalypt while other speakers addressed the effects of ants on seed dispersal, ants as vectors of orchid pollen, interactions between ants and microorganisms, ant-plant mutualisms and patterns of species richness and size distributions in ant communities.

Dudley Pinnock and Mike Keller from the Waite Department of Entomology visited the School and gave stimulating seminars in the School's Topics in Biotechnology course and Seminar Programme, respectively.

Department of Zoology, University of Adelaide

Things are quite as usual at the Zoology Department. Shelley Barker has been away hunting elusive buprestid beetles in Western Australia, and Alice Wells has been buried in teaching duties, save for several short visits interstate. At the Hennig meeting in Canberra in August Alice was astounded — as were many others — to find almost a whole session on caddisflies! Perhaps Ken Walker's extremely kind help with advice on curatorial tricks, when she visited the Museum of Victoria in September was aimed at deflecting obsessions with this group! Alice leaves Adelaide in mid-November to take up the position of Curator of Entomology in the Museum and Art Galleries of the Northern Territory in Darwin.

Department of Entomology, Waite Institute

This is the last time that the title "Department of Entomology" will be used in ***Myrmecia***. On the 1st January 1991 the Entomology and Plant Pathology Departments and Weed Science group at the Waite will merge to form the new Department of Crop Protection. Professor Allan Kerr, recent winner of the inaugural "Australian Prize" will be the new head, with the existing group of entomologists continuing unchanged with their research and teaching activities.

The 5th International Colloquium of Invertebrate Pathology and Microbial Control was recently held in Adelaide (20–24th August) and was organised by Dudley Pinnock, Jane Drummond and David Cooper. The Colloquium was attended by 270 delegates, the venue being the Adelaide Convention Centre. The Colloquium was officially opened by the Director of the Waite Institute, Professor Harold Woolhouse, and the keynote address, entitled "Bright Horizons for Invertebrate Pathology", was delivered by Dr Brian Federici, University of California, Riverside. The meeting was then organised into 29 special Symposia, followed by contributed paper sessions, with the number of invited plus contributed papers amounting to 245. The social aspects of the meeting were well catered for, with delegates making a day trip to the Barossa Valley, followed later in the week by a banquet and bush dance at the Adelaide Festival Centre. Many overseas delegates took the opportunity to visit the Insect Pathology Laboratory at the Waite while they were in Adelaide. Overall the meeting was judged a great success. Copies of the Colloquium Proceedings, priced at $50.00, may be purchased from the Organising Committee (c/- Entomology Department, Waite Agricultural Research Institute, Glen Osmond, SA 5064).

Andy Austin attended the Hennig meeting in Canberra in August. Mike Keller was overseas for August visiting USDA laboratories at Oxford, North Carolina, Newark and Delaware. Mike has also started a large project on the biocontrol of sugarcane mealybug with Peter Allsop of BSES, Bundaberg. Parasitoids should start arriving soon from Pakistan and the USA at the Waite's newly commissioned quarantine insectary.

Ian Dadour spent six weeks in the Department over July-August completing a project with Mike Keller on the genetic variation in *Pieris rapae* and its braconid parasitoids.

Mr Xia Yuhua from Fujian Academy of Agricultural Science has recently arrived to work with Derek Maelzer on the ecology of red scale. Derek decided that the Adelaide winter got too cold and he escaped to Kununurra for a week in mid-July to look at pollination problems in cashew crops, and visited DPI in Darwin on the way.

The Department has recently started a special programme of seminars for members of AES. The first seminar was given in mid- September by Gordon Gross, and entitled "Beyond the Author", was an interesting account of the history of scientific publishing. We hope the programme will soon gather South Australian members of the Society into a more cohesive and communicative group.

Department of Agriculture

Peter Birks is retiring after 30 years in the South Australian Department of Agriculture. For many years Peter led the research effort in agronomic entomology in SA and was particularly interested in locusts. More recently he has been responsible for Plant Standards, including fruit fly and quarantine.

Greg Baker attended the 2-week course on *Culicoides* vectors in Brisbane during October.

Visitors included Tariq Butt and Neil Wilding from Rothamstead to discuss *Zoophthora* vs. *Plutella*, and Richard Dysart from USDA, Montana, searching for scelionid parasites of grasshoppers.

Preliminary planning has started for merging the Department of Agriculture entomologists and those at the Waite Institute at the new Waite Agricultural Science Park (WASP!). Proposals include the merging of collections, rearing and quarantine facilities.

CSIRO Divisions of Soils and Entomology

Surveys for earthworms in the agricultural soils of southern South Australia have dominated the group's activities in recent months. It is clear that agricultural management has drastically reduced the abundance of the native fauna. Introduced species, mainly of European origin, have colonised our agricultural soils and now predominate. Studies are underway to assess the importance of the species in influencing soil structure and fertility. The long-term aim of the work is to develop strategies to optimise the influence of earthworms in agricultural soils in southern Australia. This may include recommendations for certain management practices (e.g. reduction in tillage) and the importation of additional useful species.

Penny Carter has joined the group as a technical assistant. Recent visitors have included Dr Martin Carter (Agriculture Canada) for discussions on tillage practices and their influence on soil invertebrates, Dr Jo Springett (MAF, New Zealand) for discussions on earthworm ecology and Professor Ralph Slatyer (Chief Scientist, Prime Minister's Department) to learn of our current research activities.

Andy AUSTIN
Regional Councillor

TASMANIA

Department of Primary Industry

In late October Peter McQuillan will be hosting Mr M. Kamada of the Yokohama Plant Protection Station for several days before he moves on to Queensland. Mr Kamada is a quarantine entomologist interested in quarantine facilities and programs including the codling moth disinfestation project of Margaret Williams. Peter will host Ken Key in November when Ken returns for a second search for the elusive grasshopper *Schayera baiulus* Erichson (see *Invertebrate Taxonomy* 3: 519-22). In August Peter attended the ninth meeting of the Willi Hennig Society in Canberra. Paul Wright is currently conducting several field trials using the new genus of fungus *Microhylum* for control of the pasture corbie moth *Oncopera intricata*.

Forestry Commission

Humphrey Elliott reports that an integrated pest management strategy for the chrysomelid pest of eucalypts, *Chrysoptharta bimaculata*, has been developed under the National Afforestation Program. Further refinement of the *Bacillus thuringiensis*-based strategy will be possible under funds from the Helsham Intensive Forest Management Program. George Ettershank has submitted his National Rainforest Conservation Program report on pollination of *Eucryphia lucida* the source of leatherwood honey. Also under NRCP funding Robin Coy is writing up the results of a two year survey of rainforest invertebrates which included a comparison of pyrethrum knockdown collections from exposed versus sheltered boles.

Tasmanian Museum and Art Gallery

Alison Green has identified many of the terrestrial isopods from Robin Coy's rainforest surveys. In addition to many new species familiar to Alison a completely new species was found in the Cradle Mountain campground. An exhibition of 24 drawers from George Bornemissza's beetle collection went on display from 23 August to 16 September. Attendance was 50% greater than for the same period in the previous year and feedback from the 10,000 museum visitors was good. Adrian Spinks and Brent Dawes set up the display "George Bornemissza's World of Beetles".

University of Tasmania

John Madden recently returned from a holiday in South Africa where he visited his daughter. John took the opportunity to also visit Dr John Scott of CSIRO biocontrol unit at the University of Capetown and other entomologists in Pretoria. Three of John's students have submitted theses recently: Sutohn Suwanbutr, PhD thesis on biology, ecology and control of lucerne aphids in southeast Tasmania; Cao Young, MAgSc, thesis on integrated control of twospotted

mite on hops, and Steve Candy, MAgSc thesis on biology of the mountain pinhole borer in Tasmania. John has a new PhD student Mr Aichar Lowanprasart from Thailand. He will investigate resistance and tolerance in hops to twospotted mite.

Lionel HILL
Regional Councillor

NEW SOUTH WALES
METROPOLITAN SYDNEY NEWS

Army Malaria Research Unit

Tony Sweeney and Steve Frances attended the Invertebrate Pathology Colloquium in Adelaide, 20–24th August, 1990. Whilst in Adelaide, Steve visited Dr Ron Southcott to discuss common interests concerning medically important mites. Following the conference Tony, Steve and Liz Brooke travelled to Cowley Beach, near Innisfail, northern Queensland. They hosted a post conference pathogen survey tour for 15 conference delegates, including visits to rainforest at Cowley Beach and Millaa Millaa. They were accompanied by Richard Piper of DPI, South Johnstone, who passed on some of his vast knowledge of the region. Following the tour Steve and Liz remained at Cowley Beach for a week surveying for scrub itch mites.

Dr Ronny Larsson from the University of Lund, Sweden, and Dr Al Undeen from USDA, Insects Affecting Man and Animals Research Laboratory, Gainesville, Florida, USA, visited the unit in September to discuss projects of mutual interest with Tony Sweeney and Liz Brooke regarding microsporidia parasites of mosquitoes.

Macquarie University, School of Biological Sciences

Dinah Hales and Lilian Blanco attended the International Symposium on Aphid-Plant Interactions: Populations and Molecules, held in Stillwater, Oklahoma ("cowboy country") in August. Lilian found that it is advisable to arrive at the right airport for an overseas meeting, and Dinah found that there are no taxis in Stillwater after 7 pm, giving rise to interesting proposals for (a) alternative transport to the hotel or (b) alternative accommodation. (The meeting was interesting too). On returning to Macquarie, Dinah had the happy experience of running eleven consecutive four-hour practicals on the dissection of the earthworm. The technical staff managed to provide earthworms belonging to five different species, all with totally different anatomy, just to make life a little more complicated.

Christine Stone's PhD thesis has been approved, and she will graduate next May. Congratulations, Christine! The remaining students are gearing up for the annual post-graduate student Research Conference, where all 100-odd students present seminars on their year's research.

Andy Beattie and his cohorts have been busy with fieldwork, on insect pollination systems in orchids, visiting Castlereagh State Forest and Weddin Mountains National Park. Rod Peakall, Meri Oakwood, Ian Oliver and Craig Angus were all participants. The group also had a high profile at the recent Ecological Society of Australia meeting in Melbourne, where papers were given by Rod Peakall (Ecological Genetics of Orchids), Ross Talent (Models of Extinction Probabilities), Hall Cushman (Latitudinal Patterns in Species Richness and Body Size for European Ants) and Andy Beattie (Interactions between Ants and Microorganisms). Andy also spoke on Biodiversity and Bioresources at the IGBP workshop in Canberra on Renewable Resources.

Postdoctoral Fellow Hall Cushman and his wife Vanessa Rashbrook must have some interesting conversations. Hall works at Macquarie for Andrew Beattie, Vanessa works at Rydalmere for Andrew Beattie ...

Dick Frankham recently spent 5 weeks at various overseas meetings, but has been rather hard to catch ever since. Sometime we'll find out what he's been up to.

Sydney University, Medical Entomology Unit at Westmead Hospital

John Clancy and Peter Wells are in the closing stages of completing the final report of the 1989/90 Arbovirus Surveillance Programme for the NSW Health Department. The first mosquito catches of the 1990/91 season have arrived leaving little time before the sorting and grinding of this season's mosquitoes begins. Despite experiencing a wet winter, the long term climate outlook for NSW is for average rainfall for the next three months. Thus at this stage we are not anticipating raised mosquito populations for the upcoming season.

Stephen Doggett is extremely busy processing the large numbers of ticks that have flooded in from his request to vets to supply him with ticks.

Other projects in our unit are progressing well. Peter

Wells and Danielle Heilpern were married earlier this month and have just returned from their honeymoon in Lord Howe Island, best wishes to you both.

Sydney University, Department of Plant Pathology and Agriculture Entomology

David Larsen, a gyrinid (water beetle) expert, on study leave from Memorial University of Newfoundland, visited briefly en route to Mareeba.

Entomology is supposedly to be partly relocated to another destination. Resistance to this move is continuing.

Congratulations to Harley Rose who scored $40,000 from ARC for a 3-year project on Australia's giant, burrowing cockroaches. This will enable him to pull together the preliminary studies he has made on these fascinating creatures over the last few years into a cohesive review.

University of New South Wales, CERIT

A new collaborative agreement between CERIT and CSIRO Division of Chemicals and Polymers has been signed by the Pro-Vice- Chancellor UNSW, Professor Alan Gilbert, and the Division's acting chief, Dr Peter Welles. This will provide increased recurrent funding for CERIT and ongoing assess to CERIT's facilities and expertise for the Division. Chris Orton and Chris Virgona visited the Division in Melbourne to finalise the agreement and while there also visited David Kingston, Keith Buchanan and Karen Smith (Hoechst Aust. Ltd.) and Bob Mayfield (Aust. Wool Corp.).

Jenny Anderson has made a number of trips to the Fowler's Gap Arid Zone Research Station for her blowfly work and will be even more run off her feet now that the blowfly season had arrived. Two members of staff, Karen Hudson and Louise Coady, have departed and their contributions to the department will be missed.

While in Australia for the AES Conference, Andrea Young of Bristol University visited CERIT to discuss the possibilities of doing postdoctoral work here. Bob Ryan, Department Manager (Compressed Products) of CIG visited to look at CERIT's facilities as did Dr Anne Campbell, Technical Manager and Chris Buckley of Pitman-Moore Aust. Ltd. Richard Souness, Food Science and Technology UNSW, came to discuss insect damage and control measures in fish drying in Indonesia.

University of New South Wales, School of Biological Science

Aola Richards attended the 6th International Symposium of Scale Insect Studies at Krakow, Poland, in early August. The Symposium celebrated 100 years of Agricultural University Studies in Poland. As well as visiting the Entomology Department at the University, she also visited the Academy of Sciences in Krakow and was able to spend a morning studying the 10 drawers of coccinellid specimens in the insect collection.

Together with her PhD student Con Goletsos, she also attended the 4th Meeting of the 10BC W.G. Aphidopaga Conference at Godollo Agricultural University near Budapest, Hungary in early September. They presented a paper on feeding behaviour in Australian aphidophagous coccinellids. A highlight of the Conference was the crowning of Ivo Hodek as King of coccinellids.

Between conferences Aola paid several visits to the National History Museum in London. Con also spent time in England visiting both Dr Roger Blackman at the Natural History Museum and Professor Tony Dixon at the University of East Anglia in Norwich.

Christian Peeters, formerly of Ross Crozier's Group at the University of NSW, has been in Japan since April on a research fellowship. He is studying the reproductive biology of Japanese ponerine ants (esp. *Diacamma*) with Professor Ito at Nagoya University. In August he presented two papers at the Congress of the International Union for the Study of Social Insects held in India. Christian will be returning to UNSW in November.

Australian Museum, Sydney

Geoff Holloway has been transferred from St. Vincents Hospital to a rehabilitation centre near his home in Sutherland. Progress has been slow but steady. On October 19 the Museum held a benefit party for Geoff and raised a large amount to aid his recovery.

In late August, both David McAlpine and Dan Bickel attended the 2nd International Diptera Congress in Bratislava, Czechoslovakia. As with the 1st Congress held in 1986 in Budapest, it was a great success in that it allowed the large number of eastern European workers to attend. A number of sessions at the Congress dealt with the interpretation of the Dipteran male genitalia, a complex and often partisan issue. It was more interesting to meet the younger

generation of European dipterists, many associated with centres of study in Belgium and Copenhagen.

After the Congress David visited European museums and then flew to Zimbabwe and South Africa where he collected and studied at the Natal Museum.

Dan Bickel recently has been appointed Research Scientist at the Museum.

Gerry Cassis and Max Moulds both attended the Willi Hennig meeting in Canberra. After the meeting, Gerry went to Western Australia and had a successful collecting trip. Max has been continuing on as Collection Manager of Entomology until a permanent position is advertised.

Research Associate Geoff Williams paid a visit and worked on the buprestid collection. And Gunther Theischinger dropped by labouring under an enormous manuscript which will cover the 250+ species of Australian *Molophilus* (Tipulidae).

Stephen Fellenberg has been studying at the Museum and is curating the phasmatid collection.

Visitors included: Scott Miller, Bishop Museum on Lepidoptera; Martin Heyworth, University of California; Andrew McIntyre, University of New England, to gather records of endangered Lepidoptera.

BCRI, Department of Agriculture, Rydalmere

Andrew Kotze commenced with the BCRI Entomology Branch on the 16 July and will replace Paul Hughes in the Blowfly Section. Andrew is an Australian Wool Corporation Post-Doctoral Fellow working with Harley Rose (Sydney University) and Dr S. Reynolds (University of Bath, UK) on the mode of action of cyromazine. In his new position Andrew plans to conduct studies on the enzyme systems associated with insecticide resistance in sheep blowfly.

August seemed to be the month of attending conferences! Vic Edge attended the meeting of the Cotton Research Council and 5th Australian Cotton Conference held at Surfers Paradise, 7–9 August, while Graham Baker presented a joint paper with Victor Rajakulendran on effects of soil type and aspect on nematode parasites of wingless grasshopper at the 5th International Colloquium on Invertebrate Pathology in Adelaide, 20–24 August. At about the same time Murray Fletcher and John Macdonald went to Canberra for the IXth meeting of the Willi Hennig Society, and Roger Toffolon attended the Australian Environmental Pest Managers Association annual conference at Terrigal where he presented a paper entitled "Ants — small pest, big problem". Visitors to the Branch in August included Tinkui Quin, and Ken Walker who dropped in to collect some *Lassioglossum* material and demonstrate Hennig86.

September came and saw a few changes in Entomology Branch staff. Karen Harding joined the Sheep Blowfly section as a trainee Technical Officer while Royce Holtkamp took up a position at Tamworth Agricultural Research Centre where he will be involved in research on biological control of weeds. In addition, Dr Richard Dysart, Research Entomologist, USDA-ARS, Grasshopper IPM Project, Montana, worked at the BCRI with Graham Baker between 4 and 24 September. He undertook extensive collecting of parasitised eggs for rearing under quarantine and screening for adaptation to US rangeland grasshoppers.

Merilyn GEARY & Dan BICKEL
Regional Councillors

NEW SOUTH WALES COUNTRY AREAS

NSW Agriculture & Fisheries, Yanco

David James returned to Yanco in early October after spending 3 weeks visiting various institutions in the United States discussing citrus entomology. David's trip included visits to the University of California at Riverside, the Citrus Research and Education Centre at Lake Alfred, Florida and the USDA Insect hormone laboratory at Beltsville. Dr Jeffrey Aldrich a hemipteran pheromone specialist at Beltsville has been collaborating with David in trying to identify the attractant pheromone of spined citrus bug. Jeffrey left for Australia soon after David departed, to spend 6 months at Nambour with Geoff Waite looking at pheromones of fruit-spotting bug.

Mark Stevens has been busy preparing for the upcoming rice season and has a full schedule of field trials aimed at improving control of the regions number one rice pest *Chironomus tepperi*.

Glen Warren was recently appointed as Technical Officer for the rice entomology program and recruitment procedures are currently in progress to fill Glen's former position.

David James attended the International Colloquium on Invertebrate Pathology and Microbial control in Adelaide during 20–24 August. David is currently exploring the possibilities of using fungal pathogens in the management of earth mites in pasture.

NSW Agriculture & Fisheries, Wollongbar

Neil Treverrow is looking forward to the imminent appointment of a second entomologist at Wollongbar which should occur in mid-October. The diversity of horticulture and associated entomological problems on the North coast should keep Neil and his new colleague busy for many years!

Neil attended the International Colloquium on Invertebrate pathology and Microbial control in Adelaide during August and presented a paper co-authored with Robin Bedding on Control of Banana Weevil Borer with entomopathogenic nematodes. Neil and Robin took advantage of the excursion day during the colloquium to write another paper! Ms Petra Parnitzki a PhD student at the University of Bonn visited Wollongbar for 2 weeks for discussions with Neil on nematodes and weevils. She was en route to Germany following fieldwork in Tonga.

NSW Agriculture & Fisheries, Orange

Col Bower has spent a lot of time in the south of the state during the last four months setting up a supervised pest management project with Batlow district apple growers. The project, run in conjunction with a plant pathologist, aims to demonstrate that apples can be grown with fewer pesticide applications, provided some effort is made to monitor the incidence of pest and disease. Batlow growers hope that fruit produced with fewer pesticides will be sought after by the discerning consumer.

Graham Thwaite spent two weeks in the USA during September. At the invitation of the International Organisation for Pest Resistance Management, he attended a three day meeting at Portland, Oregon to discuss acaricide resistance in mites of deciduous fruit crops. He then visited the Sacramento Delta region of California with Assistant Professor Stephen Welter, University of California Berkeley, and Dr Lucia Varela to discuss recent findings of resistance to azinphos-methyl in codling moth. In the San Joaquin Valley, Graham became immersed in matters entomological with colleagues with university, chemical industry and private consultant affiliation.

David JAMES
Regional Councillor

Overseas News

PAPUA NEW GUINEA

For the first time since 1986 the Division of Agricultural Protection (APD) has the services of a taxonomist cum economic entomologist — he is Professor Ray Kumar from Ghana, Nigeria and Kenya who arrived in Port Moresby on 29th June, 1990 to work as a Principal Entomologist on leave of absence from his University in Africa.

Imperial College Expedition led by George Beccaloni visited PNG from June 29 to August 30, 1990. The expedition did a survey of the domiciliary cockroaches and collected bio-ecological data on subsocial cockroaches of the genus *Perisphaerus*. The expedition also collected base line data to combat wood decay caused by macrofungii in PNG. The expedition discovered a new domiciliary cockroach, a new genus of semi-aquatic cockroaches and a new phasmid. George, on his way back stopped in Port Moresby to talk cockroaches with Kumar and update the nomenclature of the Blattaria and Phasmida collections in DAL (Department of Agricultural & Livestock). He also visited Cairns and looked at the habitat of the largest Australian cockroach.

PNG entomologists (Ray Kumar, Fred Dori, Roy Msamdu, Malchus Arura, Sim Sar, Sampson Laup and Bob Prior) gathered at the Annual Agricultural Research Team meeting at Lae from 7-9th August, 1990. The meeting was chaired by the new Director of Agricultural Research Mr Ted Sitapai. Papers were presented by Kumar (Modern Taxonomic Services), Masamdu & Prior (Coffee Green Scale), Arura (Taro beetle), Sar (Diamond Back Moth and Sweet Potato Weevil) and Dori (Banana Skipper).

Peter Bakker (CSIRO, Qld) visited Kumar, Dori and Arura in connection with the release of parasites against Banana Skipper. Kumar and Arura completed the first leg of a survey of insect pests of food crops of Morobe Province (Sept. 9–15, 1990). The survey covered Chivasing, Water Rise, Sangan, Bulolo and Wau. The survey highlighted the rapid spread of the spiral whitefly in the province.

Kumar also visited Ramu Sugar plantations at GUSAP and discussed the borer and weed problems with the Senior Entomologist (H. Nagaraja), Chief Agronomist (C.F.M. Sweet) and Plantation Manager (D. Eastwood). As a result he recommended the import of the parasite, *Pediobius fervus* from Kenya against *Sesamia nigrescens* and

Heteropsylla sp. against the giant weed, *Mimosa invisa*. Dr John Reid (entomologist from Calabar, Nigeria) joined UNITECH, Lae as a Senior Lecturer in the department of Agriculture on July 29, 1990. Bob Prior, coffee entomologist returned on 29th September from his recreation leave which took him to Britain, Canada, USA Hawaii and Guam - Bob also attended the *Trichogramma* workshop in Texas.

Ray KUMAR
PNG Correspondent

NEW ZEALAND

Department of Conservation staff are working hard to keep rabbits out of the Chafer beetle (*Prodontria pinguis*) reserve at Cromwell in the South Island.

Rabbits have been getting through the fence around the 91 ha reserve and destroying the food plant of the beetle, the silver tussock. The soil is very sandy and the rabbits have done a lot of damage. A poisoning programme was instituted, using 1080 (Sodium fluoacetate) baited carrots. This has been 98% successful and it is hoped to get rid of the last rabbits fairly quickly. A new fence has been constructed around the reserve and literally thousands of tussocks planted.

The reserve is very important and Conservation Department staff said anything would be considered to protect it.

John TENQUIST
New Zealand Correspondent

News from Affiliated Societies

Entomological Society of Queensland Inc.

On the weekend of 12-14 October about 20 Society members friends and children attended a camping weekend at Doug and Lin Cook's property at Cougal Creek, Upper Tallebudgera, the Gold Coast hinterland. On the Saturday, the group spent most of the morning climbing Mt Gannon, a rainforest and eucalypt covered mountain to the north of our campsite. After lunch an effort was made to reach a small knoll on a ridge to the northwest of Mt Gannon. After passing through dense stands of the spear lily, *Doryanthes palmeri*, the knoll was eventually reached and excellent views of Mudgeeraba and Tallebudgera Valleys, Mt Warning, Springbrook and Mt Cougal were obtained. The following day, a more leisurely pace was taken. Lin gave us a detailed introduction to the plants of the area where many uncommon plants were seen, including *Syzygium hogdkinsoniae* (smoothbark rose apple), *Diploglottis campbelli* (small-leaved tamarind) and *Gmelina leichhardtii* (white beech). There was some interest shown in Entomology during the day but with cool nights, collecting at the light sheet at night was not very productive.

The final meeting of 1990 will be a combined BBQ and notes and exhibits evening to be held on December 10 at DPI Entomology Branch, Meiers Rd, Indooroopilly. The BBQ will commence at 5.30 pm and the meeting at the usual time of 8.00 pm. Notes and Exhibits nights are always popular and, as always visitors are most welcome.

Greg DANIELS
Representative Councillor

Entomological Society of NSW Inc.

The Society activities for the latter part of '90 have been somewhat varied as usual. In August the members of the Society were treated to a visit to the Entomology Department of the Australian Museum. Members were given brief summaries of the research currently being undertaken by the Museum staff and then given the opportunity to view insect material and discuss their insect interests. In September, Marnie Holmes presented a travelogue on Europe and the middle east (particularly Turkey) based on

her five month overseas trip in late '89 and early '90. Finally in October the Society met at the University of Western Sydney (Hawkesbury) where Bob Spooner-Hart gave a presentation on the work on bees and predatory mites that is done in the Faculty of Horticulture. All the meetings were of great value and many thanks to all involved!

The end of the year is fast approaching and a barbeque/ collecting night has been organised at the NSW Forestry Commission establishment at Pennant Hills to close the Society's activities for 1990. As always it is sure to be a good night, weather permitting. So, as we look forward to the end of another successful year, the Society wishes all associated with Entomology in Oz Happy Christmas and Happy new Year!

John MACDONALD
Representative Councillor

News from the Conservation Committee

Several submissions were completed this quarter. These were for the Resource Assessment Commission's Inquiry into the Woods and Forests Resources of Australia and into Kakadu (third stage). Alan Anderson compiled the Kakadu submission and had an opportunity to talk to the Commissioners in Darwin when hearings were held there in order to put our case in person. Also Barbara York Main was invited on behalf of the Committee to talk to a member of the Australian Science and Technology Council (ASTEC) concerning the submission she wrote for us last year for their review of the state of environmental research in Australia. We also wrote briefly to the Tasmanian Department of Parks, Wildlife and Heritage concerning the management plan for Macquarie Island.

A new area of interest is our support for a proposal for an elaborate living invertebrate display at the Taronga Park Zoo. We are writing to the Director (copied to the relevant Minister) urging that the construction of this display be given priority, i.e. above that of more vertebrate houses, and offering any help or advice they need.

No doubt many of you will have followed the media coverage given to the Inquiry into the southeastern forests of NSW to which we contributed. It became a hot issue and although invertebrates were ignored in the public debate, probably because invertebrate conservation is just too complex an issue, there was considerable activity behind the scenes and we can feel quite pleased that they are being taken much more seriously by others apart from ourselves.

Finally I am attaching below a draft policy statement for the Conservation Committee on which I am very anxious to have some comments. Please do write (my address is on the back cover of *Myrmecia*) or ring me (06 46 4121) if you would like to have some input to this as it is important that it be approved by all members of the Society and not just Committee members.

Penelope GREENSLADE
Convenor
Conservation Committee

Policy Statement by the Conservation Committee

Last year two letters on conservation matters were printed in *Myrmecia*. One was by Mike Downes and the other by Geoff Williams. The Conservation Committee was asked by the Executive to comment on the suggestions made in these letters and to prepare a policy statement. To be frank the task was rather daunting and consequently we put it off. Other more urgent tasks had priority. However after the fourth request from the Executive, I really could procrastinate no longer so here is the first tentative attempt.

Mike's three proposals were, in brief, as follows:

1. The Society set up an education programme in ecology and conservation with a travelling educational unit to visit schools combined with a travelling exhibit on insect conservation. Both were to be funded by an increase in membership fees and by using the Society's scholarship and other prize moneys but without eliminating the award itself. Staffing (presumably by members) was to be on a roster system.

2. The Society should vigorously advocate its viewpoint on conservation ... to governments, other professional groups and the general public and increase participation in conservation ... issues and ... provide informed advice impartially to conservation problems.

3. The AES should affiliate with conservation organisations such as the ACF and urge other professional biological societies to do the same.

Geoff's suggestions were similar:

1. The profile of insect conservation should be raised

with the help of a "Marketing Division" to be set up within the Society (especially in order to modify public perceptions including those of pristine areas).

2. Lobbying for more reserves be carried out particularly to Local Councils and to "Regional bodies". He felt there was an inadequate scientific public voice heard in conservation issues. This would include compiling inventories for sites and even conducting surveys.

Mike Downes advocates a radical farreaching approach commensurate with the seriousness of the situation. We do not disagree with any of Mike's or Patrick Vaughan's (AGM 1988, Brisbane) fears for the survival of life on the planet if man does not change his current attitude to resources but we must limit ourselves to a role that is within our responsibilities and expertise as the Conservation Committee of the AES, not forgetting that we must represent the views of all members and not just our own personal ones. In other words Mike's suggestions are good ones but are we the right people to do it? I do not think the AES Conservation Committee can take on such a grandiose scheme as he suggests. Our primary responsibilities are to promote insect or probably more properly invertebrate conservation and not to educate the Australian public in general environmental issues and persuade them to change their ways of life. We are not primarily professional educators, nor are we economists or display designers.

Consequently I would suggest that we limit ourselves to advising the professional educators, economists and display designers and in fact lobby them. We are experts on insects and hopefully conservation. When we try to do something we are not expert in, we loose credibility. Admittedly we are not professional lobbyists either, but we are learning! Mike's suggestion that we fund a travelling exhibit with a levy on members and the funds from prizes is not recommended. I consider a roster of members to man exhibits is bound to fail.

The second of Mike's points, I feel we are already doing to capacity. In 1988-89 we wrote four major submissions and this last year we prepared five, with two in progress, nearly ten letters and one meeting attended. Our regular contribution to the World Wildlife Fund's Endangered Species Bulletin reaches a different audience, that of general conservationists, and we are advising the Taronga Park Zoo on an invertebrate display, so the general public is also being reached.

The third point that we should affiliate with the ACF again I do not recommend. As a semi-professional body, we might well loose our reputation for scientific impartiality should we do so. I doubt whether we would have received the SE Forests contract if we belonged to Greenpeace or the Wilderness Society. Affiliation with FASTS, in particular their new Biology section is more appropriate.

Geoff Williams' first point is essentially the same as Mike's first one. As to the Society setting up a Marketing Section, that has already been done (see Annual Report for 89-90).

Finally to Geoff Williams' second point, that of initiating reserve applications and surveys. I would like to deal with this point in more detail together with suggestions made by the Conservation Committee itself of priorities for action. These include conducting a watching brief on the following topics; the effect of insecticides on non-target organisms, burning, feral honey bees, and promoting or initiating monitoring the environment with invertebrates, mobile displays, attending state and national policy meetings on conservation, producing management plans for conservation of endangered species or higher taxa, producing publications on relevant topics and applying for grants to collect data for conservation advice.

That it is time to become more entrepreneurial is not in doubt. This is definitely the survival message of the day. However it is difficult to see how the Committee (and Society) can expand it's activities in Conservation as we are already stretched to the limit and at times I fear that although so far everyone I have asked to contribute has done so willingly, promptly and professionally, any extra load on them (and also on me) will induce a strike.

When the Conservation Committee was first set up by the Executive of the Society at a meeting on the 27th February, 1968, the purpose of the committee were stated as follows:

"A watching brief on all aspects of conservation that affect insects, with the particular object of bringing to the notice of the Executive any matters on which it appears that the Society might usefully take action; providing the relevant information so that a decision can be made, and where necessary, preparing a documented case for submission by the Executive to the appropriate authority".

This is fairly broad and allows some considerable leeway in interpretation but of recent years the Committee

has been rather more independent of the Executive and there have been many changes in interest, in attitude towards and needs of conservation by those outside the Society over the 22 years. We therefore propose the following policy changes after discussion among ourselves and after looking at what some other similar societies are doing, e.g. NZ Ecological Society:

The aims of the Conservation Committee be to promote awareness of the needs of invertebrate conservation to the general community, other conservation bodies and all levels of governments. This should be done in the following ways:

a) By preparing submissions to relevant government inquiries.

b) By lobbying politicians, public servants and those concerned with land management as to the needs of invertebrate conservation.

c) By attending meetings both at a State and Federal level at which conservation policy and practice are discussed.

d) By speaking at and preparing displays for meetings and for the general public.

e) By initiating the collection of data to support proposals for protection of invertebrate habitat.

f) By preparing and publishing literature on invertebrate conservation.

In order to be able to carry out more than a tiny proportion of this programme, we propose that the Society apply for funds so that a project officer can be employed.

My experience with conservation societies in South Australia indicates that this is necessary if we wish to expand our activities. As well as my involvement with various submissions including that for the Helsham Inquiry and our recent one for the SE Forests, current interest in Fraser Island etc. has shown me how much time effort and money is spent during these enquiries by a number of different people recycling the same tiny bits of data. What we need is the ability to collect more and relevant data.

Funding proposals are as follows:

The Society support costs of publications (figure to be decided later), cost of meeting registration (to a maximum of $500 per annum) and other small items as at present (postage, literature, discs, etc to a maximum of $100 per annum). Salary and other costs of a project officer be sought from outside the Society. Accommodation for the project officer to be discussed later.

At present the Committee has earned $2,000. Use for this yet to be finally decided by the committee.

Penelope GREENSLADE
(Convenor, Conservation Committee,
Australian Entomological Society)
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CANBERRA ACT 2601

Letter to the Editor

I write to make some comments on the 21st AGM and Scientific Conference, which I attended in Canberra in July. First I want to congratulate the organisers on a successful, interesting and well organised meeting, despite the weather.

Two matters worried me, however. On the front page of the Abstracts appeared the conference logo depicting bogong moths, and below it an explanation, which said, in part "Bogong moths ... migrate annually ... to avoid the heat of summer". If our Society is to be taken seriously by the rest of the scientific community, teleology of his kind should never be allowed to appear in our official documents. I hope future organising chairmen will edit their Abstracts with care.

The other point is a more general one and relates to graphic presentations. It cannot be helpful to throw up a slide with minute black typescript on a deep red background containing all the data from a complex experiment. Organisers should be encouraged to insist on black and white, and simplicity. Perhaps a prize for the best slides, and a brickbat for the worst, would help the old and half blind to understand.

T.O. BROWNING
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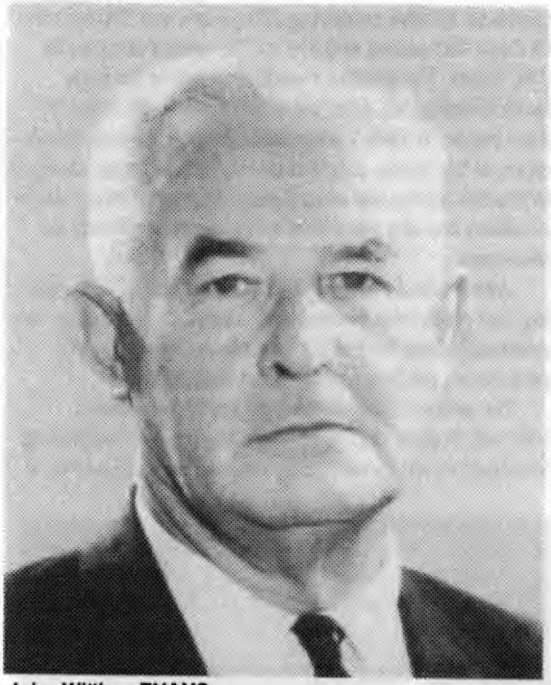
Obituary



John William EVANS
(1906–1990)

John Evans, Director Emeritus of the Australian Museum, died in Sydney on 15 July 1990 at the age of 84. An outstanding entomologist from his early youth, John's career spanned the United Kingdom, New Zealand, Tasmania, New South Wales, Canberra and other parts of Australia.

He was born in Jabalpore, India, son of Brigadier W.H. Evans, well known for his work on hesperiid butterflies. He attended Hurst Court Preparatory school near Hastings, and then Wellington College, Berkshire. After leaving Wellington, he took up residency at Jesus College, Cambridge. Here he read Zoology, Botany and Geology and obtained the fine biological education which was to stand him in such good stead in his future career.

He joined a firm after graduation which was to hunt sharks in southern waters and was sent out to Australia on a migrant ship, the *SS Baradine*, in 1926, disembarking in Adelaide. He went on to Sydney and discovered the firm for which he was to work had folded.

He was at first employed by CSIR (now CSIRO) as a scientific abstractor but was subsequently awarded a Science and Industry Fund Studentship for a year's study under Dr R.J. Tillyard at the Cawthron Institute in New Zealand. Here he was involved in the biological control of introduced plants and here he also obtained much of his basic training in Entomology.

He returned to Australia in 1928. R.J. Tillyard had offered him a position in the newly formed Division of Entomology of the CSIRO which Tillyard was to head. He accompanied Tillyard on a ship to USA and UK examining biological control methods. John remained in the UK to work for a period at Farnham Royal where the Imperial Bureau of Entomology was situated.

On his return he commenced work at the Division of Entomology at Canberra. John worked on rearing *Trichogramma* to control codling moth and later on the ecology of apple thrips in South Australia. From 1932 to 1934 John Evans worked in Adelaide with occasional visits to Canberra. It was during this period his friendship with Faith Tillyard blossomed and she became his wife in February 1934.

In 1935 John was appointed Government Entomologist in the Tasmanian Department of Agriculture. Faith and John spent six happy years of their lives in Hobart. It was here in 1937 that their son Jeremy was born and their daughter Joanna in 1939. During this period, John worked mainly on the pests of importance to Tasmanian agriculture including an investigation of the food of trout. The publications emanating from his Tasmanian period were many and varied. It was here also that he started on his lifetime research on the Homoptera. On Mount Field West he found his first peloridiids (moss bugs) and has since published many significant papers on these insects. In 1939 he was awarded a DSc by the University of Tasmania for his research.

Duty called and in 1944 John returned home to England to join the staff of the Imperial Institute of Entomology in London. From 1944 to 1949 he was employed as a Senior Entomologist working mainly in the British Museum of Natural History where he was responsible for the identification of all Hemiptera sent to the Institute. His stay there was not a very happy one, and in 1948 he was appointed a Deputy Chief Scientific Officer in the Infestation Control Division of the UK Ministry of Agriculture and Fisheries. In this position he had to oversee the activities of an Entomology Branch (stored product insects) and Chemical Branch and a

Vertebrate Pest Research Branch concerned mainly with the eradication of rabbits. In 1949 he was awarded the ScD by his *alma mater* for his published research work.

His division moved from High Holborn to Tolworth in 1950. The activities of the Division were increased during John Evans' period of direction and its scientific status greatly enhanced. In his latter years he was concerned with myxomatosis and the control of grey squirrels. His views on these matters were not always accepted by the various committees on which he served as government member and this section of his autobiography, published in 1989, makes most entertaining reading.

In 1954 he accepted the Directorship of the Australian Museum, in Sydney, and returned once more to Australia. This post was to be one of his greatest challenges yet gave him his greatest satisfaction. In this post he was a most successful and influential administrator. He served as Director until his retirement early in 1966. During this time he modernised and restructured an Institution that had hardly changed for 50 years. A complete new wing was added to the Museum and new highly qualified curators were appointed in all areas.

When he retired on 16 January 1966 after 11 years as Director he had transformed the Museum from a storehouse of preserved specimens into a dynamic research institute that had an enviable international reputation. John was also concerned with the lack of public commitment to the Museum and initiated and expanded education and public relations programmes that gave the Museum an authoritative voice in the public arena. These initiatives were built on by subsequent Directors so that today the Museum is a public facility of great vitality, as well as being an internationally respected scientific institution.

John Evans was a member of many societies and learned bodies and served on the councils of many of them. These are listed in the tribute to him by Tom Woodward (1966), published after his retirement. He was elected to Honorary Life Membership of the Australian Entomological Society in 1970.

Despite the increasing responsibilities of his various positions, John maintained an enviable record of publication in the taxonomy of his beloved leafhoppers. John was the first taxonomist specialising in Australian leafhoppers who actually lived in Australia. Previous workers had worked on material borrowed from collections or collected on brief visits.

His catalogue of the leafhoppers and froghoppers of Australia and New Zealand (1966 and updated in 1977) covers six families containing 223 genera and 699 species. Of these 100 genera and 314 species were described by J.W. Evans. The greatest contribution was to the large family Cicadellidae. John published a landmark series of three papers in 1946-7 which established a natural classfiication of this family. John's classification still forms the basis for the subfamilial and tribal classfiication used today, and it is unlikely that any more than minor changes will ever be necessary.

John's broad knowledge and understanding of morphology (on which he published extensively), palaeontology and systematics was the basis for an intense interest in the evolutionary relationships between organisms.

His work on the problematical family Peloridiidae reflected his approach. A thorough study of the morphology (external and where necessary internal) was followed by a

One of John Evans' last duties before retirement was to award book prizes to the first five Australian Museum Discoverers. The 14-year lad in this photo is none other than Murray Fletcher who grew up to occupy John's shoes as Australia's leading homopterist (and who is co-author of this obituary).

comprehensive taxonomic treatment of the family. This gave a solid basis for proposing evolutionary relationships, both within the family and at higher classificatory levels.

The key to John Evans' remarkable success both as a scientist and as an administrator lay in a combination of his personality and his training and wide experience in biological and administrative fields. He was a man with drive and energy, an eye for essential detail and he did not tolerate foolishness. To many he seemed brusque but this quality hid an underlying kindness and sympathy, a keen sense of humour and a desire to foster ability and worthwhile enterprise. He never held a grudge against anyone. It was said of him that he could reprimand a staff member in the morning and have a beer with them in the evening. For this reason he was held in great respect by all his staff.

He also had great interest in the development of natural history interests in young people. This was reflected in the many education programmes developed under his directorship at the Australian Museum. It is also reflected in the interest he took in students working on the taxonomy of leafhoppers, both in Australia and throughout the world. It provides an enormous boost to a student to discover that a man of such impressive reputation and scientific standing has a genuine personal interest in the progress of your project. He learnt this from W.E. China, of the British Museum, who took great interest in John's own early work on leafhoppers. He had a deep admiration for those who retained a general interest in natural history, despite the need for greater specialisation in their scientific work.

Many tributes have been sent to Faith following John's death. Perhaps the most perceptive was that from Miriam Rothschild who knew John well across some 40 years. Miriam wrote:

"The world is a poorer place without John who was a great credit to the human race and restored one's belief in wretched *Homo*. This was something which shone out of his personality and which I was aware of the moment our paths crossed at the early Myxo committee. So long ago now!"

He was a man of absolute integrity - a rare thing in today's world.

F.J.D. McDONALD (Sydney Univ.)
M.J. FLETCHER (BCRI, Rydalmere)

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WOODWARD, T.E. (1966) Retirement of Dr J.W. Evans. *Australian Entomological Society News Bulletin* **1966**: 11–15.

Obituary

Ernest J. MARTYN
(3.iv.1926 — 5.vi.1989)

Ernie Martyn, a foundation member of the Australian Entomological Society, and former Chief Entomologist and Deputy Director of the Tasmanian Department of Agriculture (now Primary Industry), was born in Sydney, the son of Joseph and Mary Martyn. Ernie was educated at Lewisham Primary School and Christian Brothers College, Lewisham, where he won the James Murphy School of Agriculture scholarship to study at Sydney University.

After graduating with a BScAgr his entomological career began in March 1948 when, as Assistant Entomologist, he

joined the Tasmanian Department of Agriculture with L.W. Miller in the newly formed Entomology Division. Early in his career Ernie tackled the challenge posed by pasture insects which, with rabbits, had been largely responsible for the near crisis in the pastoral industry pre-war.

In this endeavour he made an outstanding and lasting contribution to Tasmanian agriculture. For nearly a decade he systematically evaluated newly available pesticides and determined effective control strategies based on a thorough understanding of insect ecology. A meticulous worker and observer, Ernie established reliable protocols for field-testing pasture pesticides which remain in use today. His prescience and early insistence on the development of alternative materials and approaches was to later save Tasmania from many problems related to persistent soil insecticides which now afflict some other parts of Australia.

Cockchafers (Scarabaeidae), corbies, oxycanus grass grub (both Hepialidae) and southern armyworm (Noctuidae) were all subjects of rigorous research by Ernie. His discoveries were rapidly harnessed to help overcome the serious pest problems that threatened the viability of various soldier settlement schemes in the 1950's. In 1956 he was awarded a MScAgr for a comprehensive study on the systematics, ecology and bionomics of corbie, *Oncopera intricata* Walker.

In his second decade of research he developed an interest in aphids and, characteristically, became an authority on them. With others, he organised extensive baseline surveys of the fauna and its distribution and established a valuable reference collection, culminating in a published checklist and hostplant register (with N.M. Hudson). As a result of this work the aphid fauna of Tasmania is arguably the best known of any State in the Commonwealth.

With K.A. Pickett, he discovered the primitive *Nothofagus*-feeding aphid, *Sensoriaphis tasmaniae* Carver & Martyn, (which later became a celebrated example of the relict Gondwana fauna) and a new genus of native aphid, *Epacridaphis* Carver & Martyn.

His third decade in the Department saw his talents acknowledged with promotion, firstly to Chief Entomologist in October 1967, then Deputy Director of Agriculture in 1976. Amongst other duties Ernie now oversaw all research in the Department. He also took an active role in agricultural administration, representing Tasmania on the Standing Committee on Agriculture, the federal body of AIAS, and was a long time member of the Pesticides Advisory Committee. It must have been with some satisfaction for him that the 1982 Review of the Department split his excessive workload amongst five Directors of Services, he retaining the largest, Plant Services, until his retirement on 8 July 1987.

In his spare time, Ernie served the Hobart community as a Counsellor at Centrecare, the family welfare organisation, especially through its formative years. He will be remembered as an unpretentious yet successful and devoted scientist and a Christian family man. His wife, Cecelia, six daughters and a son survive him.

A bibliography of E.J. Martyn is published in "Insect Pest Survey No. 4", Tasmanian Department of Agriculture, Hobart (1972).

Peter McQUILLAN
Department of Primary Industry, Tasmania
(with the help of Ian Geard and Ken Pickett).

A BRIEF HISTORY OF THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

By E.N. MARKS

Presented at a Parliament House Reception during the Society's Twenty Fifth Anniversary Meeting, Canberra, July 1–5 1990

The successful first 25 years of The Australian Entomological Society (Aust.Ent.Soc.) have depended on a large number of members who have given it their time and energy and wisdom. I shall mention only two by name. You will find others, Officers and Councillors, Assistants and Committees listed in the Society's News Bulletins. Others again remain nameless — the referees who help maintain the *Journal*'s standard and the administrators who allow their Departments to facilitate Society affairs.

Although there were earlier discussions, I shall start this history with a meeting of entomologists held during the Sydney ANZAAS Congress in August 1962. That meeting decided to ask the Entomological Society of Queensland (Ent.Soc.Q.) to canvass the opinions of Australian entomologists on formation of a national society.

During the next ANZAAS Congress in Canberra in January 1964, the Ent.Soc.Q. reported to a meeting of entomologists that of 176 who answered its questionnaire, 166 favoured a national society, 160 wanted it to publish a journal and 128 wanted it to represent Australia internationally. The Canberra meeting resolved that an Australia-wide entomological society be formed and appointed a working party of four senior entomologists, including Ian Mackerras as Convenor, to prepare an acceptable draft constitution. A major concern was to involve the local societies without diminishing their independence or altering their distinctive individual characters.

Mackerras had wide experience in local and national scientific societies. He was then editing "The Insects of Australia" and from time to time visited the states to talk to chapter authors. This gave him the opportunity for direct discussions with local entomologists.

The Working Party in April 1965 circulated a draft constitution for a national society with a membership application form. The inaugural meeting of Aust.Ent. Soc. was held on 17 August 1965 during the Hobart ANZAAS Congress. By this time 285 had applied for membership and three local societies wished to affiliate. Membership passed 500 during 1974 and in May 1990 stood at 795.

Rapid progress of the Society was facilitated by the provisional constitution, which differed little from today's. A key feature was the administrative set-up. The Vice-President was not an understudy waiting to be next President, but Chairman of the Executive. Although later enlarged the Executive then included only the Vice-President, Secretary and Treasurer. Two of these three officers constituted a quorum as they still do. These three officers had to be resident in the one locality which became the Society's headquarters for the time being. This small central administration could act quickly but was required to consult the President on policy matters. The President represented the Society at the national level. After the first Annual General Meeting (AGM), when a Council representing the States and the affiliated societies was elected, it also was consulted on policy. The Councillors also provided an effective support by maintaining members' interest in the Society and through their contributions to the *News Bulletin*.

The Hobart meeting elected Ian Mackerras, President, and also a Vice-President, Secretary, Treasurer and Editor. Brisbane was appointed first Headquarters. Ian, both in the lead-up stages and in his wise counselling of the first Executive, played a unique role in initiating the Society's success.

Communication with members was quickly established through a quarterly *News Bulletin* first produced in Sydney in November 1965, when the Society's emblem, a bulldog ant, first appeared on the cover. It was chosen after an Officer remarked "It reminds me of our President — when he gets his teeth into something he does not let go." Our Society has demonstrated the same characteristic. The *News Bulletin* has gone from strength to strength, in 1989 its title was changed to *Myrmecia*. Publication in it, since 1984, of lists of postgraduate projects has stimulated increased student membership.

A committee of local members was appointed to arrange the first Annual General Meeting to be held in January 1967 and to include a scientific session in association with the Melbourne ANZAAS Congress.

The next major objective was to publish a *Journal* of international standard. Through the generosity of the Ent. Soc.Q., which had started publishing a high standard *Journal* in 1962, a merger with its *Journal* was negotiated. The series *J.Ent.Soc.Qd.* Vols 1-5 was continued without

change in Volume number sequence (or of editor) with publication in 1967 of *J.Aust.Ent.Soc.* Vol. 6, expanded from a single annual issue to two parts; in 1970 it grew to three and in 1971 to four. In 1968 an Editorial Board was appointed to assist the Editor.

The *Journal* was not the Society's first publication, as its *Handbook No 1* "The Collection and Preservation of Insects" was published in 1966. This proved a best seller and is now in its third edition with a fourth contemplated.

Mackerras was a Fellow of the Australian Academy of Science and the two succeeding Presidents were also Fellows of the Academy. This facilitated discussions started with the Academy in 1967 which led to presentation at the XIII International Congress of Entomology in Moscow in 1968 of a joint invitation from the Australian Academy of Science and Aust.Ent.Soc. to hold the XIV Congress in Australia. The invitation was accepted. The Society mounted a small exhibit at the Moscow Congress.

Meantime the Society's second AGM in February 1968 was a successful residential meeting in Armidale. After the third AGM at Victor Harbour in August 1969, Canberra became Society Headquarters.

The Provisional Constitution needed revision to provide for legal incorporation of the Society. This was largely undertaken by the new Secretary, Phil Carne, who was wise in the ways of societies. Phil was secretary from 1969 to 1974 and again from 1984 to 1987. Incorporation in ACT was granted in 1971. It required election of a Public Officer resident in ACT; Phil held that office from 1969 to 1989. His calm wisdom and rock-solid reliability had a tremendous influence on the Society during his phenomenal period of service.

The fourth AGM was purely a business meeting held during the XIV International Congress of Entomology in Canberra in August 1972. The Congress was a resounding success, thanks especially to the work of its secretary and of ACT members, and it gave the Society an international reputation. However the Society was still little known to the higher echelons of science administration in Australia, other than to the Academy. That was to change with the battle of 13A, of which more anon.

Reverting to other activities initiated before 1972, in 1968 the Executive appointed a Conservation Committee with a watching brief on aspects of conservation that affect insects. Its personnel has changed over the years and the extent of its activities has fluctuated; today it is more active than ever before in providing submissions to Governmental committees of inquiry.

The Society supported the Academy's proposal in 1969 to establish a Biological Survey of Australia and in 1971 it presented a submission to the House of Representatives Select Committee on Wildlife Conservation. A *Miscellaneous Publication*, "Directory of Australian Entomology", was published before the Congress in 1972 followed by a second edition in 1983 and a third in 1990. When in 1988, the Ent.Soc.Q. took over publication of the *Australian Entomological Magazine*, the Aust.Ent. Soc made a one-off grant of $1000 to Ent.Soc.Q. to support the 1988 issue.

AGM's were initially held when possible in conjunction with ANZAAS, but the requirement was dropped from the definitive constitution. On 19 July 1973, Regulation 13A of the Customs Act was enacted prohibiting the export of live or dead insects (including ticks and spiders) except with a permit from the Minister or a person authorised by him. Very strict guidelines for its administration were issued by the Department of Science in October 1973. The legislation had been introduced at the request of the Conference of Australian Museum Directors (CAMD). It was not concerned with conservation, but solely with ensuring that type specimens of Australian insects were deposited in Australian institutions.

Up to this time there had been unfettered freedom to send insects overseas. Institutions and entomologists already had effective "gentleman's agreements" with overseas colleagues who duly returned holotypes of insects sent them for description. Between 1951 and 1975, 1231 holotypes of Australian insects, ticks and spiders were deposited in Australia and only 116 overseas. Opponents of the Regulation maintained that it denied the principle of free exchange of scientific material between bonafide scientists for scientific purposes and they adduced many other arguments for its repeal.

The Society presented cases for both sides in the *News Bulletin*. Of 270 respondents to a May 1974 questionnaire, 60% wanted the legislation repealed and 32% wanted it modified. The seventh AGM in January 1975 resolved that the Society would seek the best and most liberal solution attainable. The Aust.Ent.Soc. kept other societies similarly concerned, informed of its activities. Negotiations with CAMD to recognise principles of scientific freedom in the Guidelines failed and in September 1975 the Society submitted to the Minister for Science a fully documented

request for repeal of Customs Regulation 13A. That Minister refused but when his Government was dismissed the new Minister for Science received a deputation from the Society and then asked the Academy of Science to achieve a firm recommendation on the future of 13A based on a solid consensus from the scientific community. Society and CAMD representatives met with an Academy Committee. In November 1976 the Academy advised the Minister that Regulation 13A should be repealed. Meanwhile the Society's President was invited to give a paper on the legislation at the XV International Congress of Entomology in Washington in August 1976.

The matter dragged on. In October 1978 representatives of the Academy, Aust.Ent.Soc, CAMD and CSIRO met Officers of the Department of Science to discuss 13A. The tenth AGM in January 1979 instructed the Society to continue its efforts to have the Regulation repealed. Revised and improved guidelines were issued in May 1979.

By 1980 the Bureau of Flora and Fauna was investigating the effects of 13A. In 1982 the Society's request to see the draft of new legislation was refused. On May 1, 1984 the Wildlife Protection (Regulation of Exports and Imports) Act 1982 came into force. It superseded Customs Regulation 13A which was rescinded. The new act recommended return of holotypes "where scientifically appropriate".

It could be said that the Society lost the battle but won the war, for through its efforts concerning 13A it achieved wide recognition as an important representative national scientific body.

Mackerras, in a letter to members in the November 1965 *News Bulletin*, said that one of the Society's duties was to maintain the highest attainable standard in everything, big or little, that it does.

The Society gives awards to this end. Competition for student awards started in 1971 and though there have been years with no awards, in most cases the standard attained is very high. Prizes for taxonomic illustration have been awarded since 1986, and research grants for people without access to normal funds were commenced in 1989.

Appropriately, the award that best fulfils the Society's 'duty' as pronounced by Mackerras, is the Mackerras Medal. After his death in 1980, a Memorial fund was established in 1981 by appeal to members and the first Mackerras Medal for excellence in Entomology was awarded in 1984.

ARCHIVAL LABELS FOR INSECT COLLECTIONS

As an observer at the recent inaugural meeting of the Heads of Australian Entomological Collections in Canberra, I was surprised to learn that many entomologists are unaware that ordinary acidic paper breaks down with time. Some collections such as ANIC have been using acid free paper for their labels for some time but it was obvious that many are not, and I think some explanation of the problems may be helpful.

Paper manufactured in the early days was made from rags and the best modern paper such as watercolour paper is still made that way. The long linen or cotton fibres have great strength and also stand up well to immersion in liquid.

Modern paper is made mainly from wood pulp. This is naturally yellow and requires bleaching, often leaving a chlorine residue which can increase the acidity. The main source of acids is from the breakdown of lignin, a constitutent of wood pulp and from acidic sizes made from rosin and alum, used to prevent the ink running. Acids present in the paper attack and weaken the cellulose fibres causing embrittlement and subsequent fragmentation and also tends to bleach pigments in inks.

Some modern papers are buffered using calcium carbonate and other alkaline chemicals. If the paper has acid present eventually the buffer may be consumed and the paper starts to deteriorate.

The best possible paper for insect labels would be one made from 100% cotton rags with some buffering and a smooth surface. The trouble is that it is difficult to obtain this at suitable weight and at reasonable cost. Overseas collection groups are agitating manufacturers for a more suitable product and perhaps we will see a better range in Australia in the near future. Collectors should also be aware that some laser printed and photocopied labels do not last in alcohol. Abrasion in alcohol is the main problem here. Coated coloured papers often used for type labels quickly lose their coloured coating and become useless in alcohol. I have no information about their long term dry stability.

If we are prepared to pay 3 or 4 cents per specimen for stainless steel insect pins we should be prepared to pay for archival labels. Like the pins they will save us a lot of trouble in the long run.

Geoff THOMPSON
Queensland museum

AUSTRALIAN BIOLOGICAL RESOURCES STUDY

The Australian Biological Resources Study has announced its funding grants for the year 1991. The lucky recipients for entomological projects are as follows:

AUSTIN, Dr.A.D. Taxonomic studies on Australian Braconidae (Hymenoptera:Parasitica). $16,334.

BARKER, Dr S.C. Taxonomy of the Boopidae (Phthiraptera): a review of the genera and the *Heterodoxus octoseriatus* group. $8,000.

BLACK, Mr D.G. Taxonomic studies of Australian Diplopoda. $5,700.

CALDER, Dr A.A. Generic revision and classification of Australian Elateridae (Coleoptera). $16,790.

CASSIS, Dr G. A taxonomic revision of the earwigs (Insecta:Dermaptera) of Australia. $51,055.

CRANSTON, Dr P.S. Illustration of keys to larval Chironomidae (Diptera). $31,646.

DAHMS, Mr E.C. A taxonomic and biogeographic study of Australian semi-arid and arid wasps of the family Encyrtidae (Hymenoptera:Chalcidoidea). $6,500

DAVIES, Dr V.E. New spider genera (Aranea:Amaurobiidae) from Australian rainforests. $1,210

GRAY, Dr M.R.B. A review of the spider subfamily Desinae (Desidae) and cryptozoic Tasmanian spiders of the families Amaurobiidae and Stiphidiidae. $14,000.

GREENSLADE, Ms P.J.M. Taxonomic study of Australian Collembolan genera. $37,600.

HARVEY, Dr.M.S. The systematics of the Australian Oonopidae (Araneae). $20,000.

HORAK, Dr M. Genus level review of the Australian Phycitinae. $27,646

HUNT, Dr G.S. Australian Triaenonychidae and Megalopsalidiidae (Opiliones). $4,000.

REID, Mr C.A.M. Taxonomic revision of the Australian genera of Eumolpinae (Coleoptera:Chrysomelidae). $20,500.

ROTH, Dr L.M. Investigations into Australian cockroaches. $2385

RUSSELL, Dr R.C. Taxonomy of Australian Ceratopogonidae (Diptera). $31,105

SOUTHCOTT, Dr R.V. Revision of Trombidioidea and Erythraeoidea (Acarina). $2,500.

TAYLOR, Dr R.W. Taxonomic revision of the Australian ants of the genus *Meranoplus*. $20,000.

TAYLOR, Mr K.L. Taxonomy and biology (particularly host tree associations) of Psyllidae on *Eucalyptus* and other Myrtaceae. $1,200.

WHITTEN, Dr M.J. Taxonomy of the ant genus *Iridomyrmex*. $41,081.

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Coming Events

COLEOPTERA LARVAE WORKSHOP

This will be held at the University of Hawaii, Honolulu, during the period June 2-8, 1991. Instructors for the week-long workshop will include Daniel K. Young (Wisconsin University), John Lawrence (CSIRO Canberra), Alfred F.Newton (Field Museum, Chicago) and Al Samuelson (Bishop Museum , Honolulu). The course fee is expected to be about $350. Registration forms and further information are available from: Tina Kuklenski, Dept of Entomology, Bishop Museum, PO Box 1900-A, Honolulu, Hawaii 96817-0916. Number limitations will apply.

EXOTIC ANTS: BIOLOGY AND IMPACT OF INTRODUCED SPECIES

This 3-day International Conference , followed by 2-3 days excursions, will be held in October, 1991, at the Charles Darwin Research Station in the Galapagos Islands, Ecuador. Topics to be dealt with include (i) biology of introduced ants (ii) reproduction, colony founding and dispersion (iii) field biology and population ecology, and (iv) impact and control of introduced ant species in fragile ecosystems. For further information contact: Dr D.F. Williams, USDA-ARS Medical and Veterinary Entomology Research Lab, P.O.Box 14565, Gainesville, Florida. 32604.

17TH PACIFIC SCIENCE CONGRESS

XVII PACIFIC SCIENCE CONGRESS

Towards the Pacific Century: The Challenge of Change

Will be held in Honolulu, Hawaii on May 27 - June 2 1991. Major symposia include: Global Environmental Change - Pacific Aspects; Population, Health and Social Change; Science and Culture; Biological Diversity; Emerging Technologies and Development; Frontiers of Physical Science: New Technological Advances and Pacific Science.

19TH INTERNATIONAL CONGRESS OF ENTOMOLOGY

The next International Congress will be held in Beijing, China, during the period June 28 - July 4, 1992 and is sponsored by the Entomological Society of China. The first announcement brochure has now been circulated and the second announcement brochure will be sent in March 1991 to those who have lodged their names with the Secretariat. To obtain the first announcement please write to: Prof. Z.I.Zhang, Secretary-General XIX International Congress of Entomology, 19 Zhongguancun Lu, Beijing 100080, CHINA. Tel: (861)2563011. Fax: (861) 2565689. Telex:222337 ICCST CN.

2ND INTERNATIONAL WORKSHOP ON LOWER LEPIDOPTERA

The 2nd International Workshop on Lower Lepidoptera will be held 22-25 March 1991 in Canberra, Australia. The program will include a series of review papers and short research reports. Contributions will include taxonomy, phylogeny and classification, biogeography, morphology and anatomy, ultrastructure, molecular taxonomy, general biology, palaeontology and systematic methodology.

The meeting will take place at the CSIRO Division of Entomology which also houses the Australian National Insect Collection.

An account of the first meeting in this series is given in *Antenna* 14(2): 84-85 (1990) by N.P. Kristensen.

The registration fee will be approx. A$100 and reasonably priced accommodation will be provided. Anyone wishing to receive further information and to offer contributions to this meeting, should write to: Ebbe S. Nielsen, CSIRO Entomology, GPO Box 1700, Canberra ACT 2601, Australia; telephone (06) 245 4258; fax (06) 246 4264.

8TH INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS

To be held at Lincoln University, Christchurch, New Zealand, during the period 2-7 February, 1992. Information is obtainable from Ms P. Syrett, DSIR Plant protection, Private Bag, Christchurch, N.Z.

11TH INTERNATIONAL SYMPOSIUM ON CHIRONOMIDAE

This meeting will take place at the University of Amsterdam, the Netherlands, on 12-14 August, 1991. Contributions are expected to cover the whole field of research on the midge family Chironomidae including ecology, environmental changes, pollution, water quality, ecotoxicity, physiology, biochemistry, taxonomy and systematics. The Proceedings will be published. To receive the comprehensive second circular write to the following address:

11th International Symposium on Chironomidae
Conference Office
University of Amsterdam
Spui 21
1012 WX Amsterdam
The Netherlands

22ND AGM AND CONFERENCE OF THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

Our next meeting will be held in Melbourne 14-19 July, 1991.

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NEW BOOK

Common Dung Beetles in Pastures of South Eastern Australia by Marina Tyndale-Biscoe, 71pp, CSIRO Australia, 1990.

During the last decade the CSIRO exotic dung beetle programme imported numerous species of exotic dung beetles to Australia in an attempt to deal with the artificial situation caused by the failure of native dung beetles to deal with great accumulations of cattle dung in pasture situations. Of the many species tested some failed and died out, but many others established well and are now part of the permanent Australian pasture fauna. Some of these have probably already reached their potential distributional range while others are still expanding.

This attractive booklet is funded by CSIRO, the Dairy Research Council and the Australian Meat and Livestock Research and Development Corporation, the principal sponsors of the dung beetle programme. Liberally illustrated in colour it gives a guide to all the introduced and common native species likely to be found in pasture situations in southeastern Australia. As well maps are provided for most species showing actual distribution, and for some the potential distribution as predicted by the Climex program. Information is given on distinguishing characters, biology, activity period and history of introduction.

The stated aim of this booklet is to help farmers in S.E. Australia to identify the introduced dung beetles on their properties, and to indicate where and how they could obtain others. But any entomologist interested in dung beetles will find it an elegant and informative little reference (GBM).

This Centre is a research and educational facility on the Coral Coast, midway between Mossman and Cooktown, in the Daintree area of far-north Queensland. It was established to encourage research in the Australian lowland wet-tropics. A rainforest environmental interpretation facility, the "Bat House" on the Cape Tribulation road caters to the tourist and backpacker traffic in the area.

The research station is situated on 8.5 ha of regenerating pasture land and rainforest in the Mt Sorrow basin at the base of Cape Tribulation, and is surrounded by the Cape Tribulation National Park, and also by areas of private land on which long-term research can be carried out in a wide range of habitats. It is within half a kilometer of the Coral Sea Coast and its adjacent fringing reefs, mangroves and melaleuca communities. It is very close to a number of "refugial" areas (such as Noah Creek). Mt Sorrow (750m) and Mt Hemmant (1000m) offer opportunities to establish altitudinal transects from primary coastal rainforest to mountain-top communities.

The Centre has laboratory and accommodation facilities plus a range of research equipment such as balances, spectrophotometers, microscopes, radio-tracking equipment, limited biochemical and histological equipment, surveying gear, etc. Although only established in 1989, researchers at the Field Station have already initiated a number of long-term research programmes on aspects of the ecology of lowland tropical rainforest of the area and its pollinators, in particular on cluster figs and their pollinating wasps, and on blossom and fruit bats in the area. Researchers considering projects in the Australian lowland wet tropics are invited to contact the Centre.

The Centre is a member of the United States based Organization of Biological Field Stations (OFBS), and is informally affiliated with James Cook University, in Townsville. From 1991, the Centre will be offering two scholarships for postgraduate researchers to carry out research leading to MSc or PhD qualifications in subject areas relevant to the aims of the Centre. Each scholarship provides one year of accommodation and bench fees at the centre, which may be spread over a period of up to three years.

For additional information, contact Dr Hugh Spencer or Brigitta Flick, at Cape Tribulation Field Study Centre, PMB 5, Cape Tribulation, via Mossman, Qld. 4873 or phone (070)980068 or 980063.

INVERTEBRATE BIODIVERSITY IN FOREST CANOPIES — COMMENT

Monteith (1990) (*Myrmecia* 26(3):93-95) suggests that a ratio of 4 specimens per species of insects collected from forest canopy is "improbable".

I am currently preparing a paper based on extensive sampling (10 occasions over 3 years) of jarrah (*Eucalyptus marginata*) pole crowns. Data collected in September 1985 show that the ratio in the total collection is 33 spm/sp.

However, if the pest lepidopteran *Uraba lugens* is excluded, this ratio decreases to 4.4 spms/sp. Ratios for other taxa are as follows:

Araneae 2.3
Hemiptera 8.5
Diptera 3.5
Coleoptera 3.5
Hymenoptera 2.2

Ratios for three readily identified families are:

Curculionidae 7.0
Chrysomelidae 4.7
Formicidae 1.8

I think that these low ratios are simply an expression of the well known ecological fact that the majority of species in a natural community are rare, as evidenced by Fisher's and Preston's species abundance curves.

Ian ABBOTT
W.A. Dept of Conservation and
Land Management

REPLY TO IAN ABBOTT

I'm afraid the figures above have no relevance to the point I was making in saying that Roger Kitching's apparent ratio of 4.2 specimens per species (spms/sp) was "improbable" unless Ian Abbott gives the size of the sample from which his figures are derived. Naturally the ratio of spms/sp is entirely relative: the larger the sample one takes in a particular environment the larger the ratio must become as you progressively approach and surpass the idealized sample size which will contain all available species. The point I made was that if "small size" rainforest samples such as those of Erwin and Stork yielded about 8 spm/sp, and "medium size" samples such as those Basset yielded ratios of 55 spms/sp, then it was "improbable" that a "very large" sample such as Kitching's would yield a ratio of only 4.2 spms/sp.

Although Abbott refers to a 3-year sampling programme of Jarrah, his quoted ratios are based on only one sample from September 1985. If indeed the figures for the ants in that sample are only 1.8 spms/sp (ants are usually numerically dominant) then this would indicate that his sample size is quite small compared with the rainforest canopy samples under discussion. Thus his spms/sp ratios are naturally small.

It is also quite invalid to exclude the common *Uraba lugens* from the ratio calculations (before which Abbott's ratio was 33 spms/sp). It is quite normal for these sorts of samples to be numerically dominated by a small number of very common species. These are included in the other ratios under discussion. The excuse that in this case the common species is a "pest" (though a native insect on a native tree) has no foundation.

There has been another recent attack on the theoretical basis for Terry Erwin's enormous global estimates of rainforest species (C.D. Thomas, *Nature* 347:237, September, 1990). This suggests that his figures should be reduced to less than a third. I remain convinced that, until hard figures are produced by actual counts, many of the enormous guesstimates being made by extrapolation from small subsamples must remain in the "improbable" category.

Geoff MONTEITH
Queensland Museum

SMITHSONIAN RESEARCH FELLOWSHIPS

The Smithsonian Institution in Washington DC is calling for applications for research fellowships for 1991-92 in various spheres including Biological Sciences. These are awarded to support independent research in residence at the Smithsonian in association with research staff and using the Instituition's resources. Predoctoral and postdoctoral fellowship appointments for 6-12 months, and graduate student appointments for 10 weeks are awarded. Proposals in Biological Sciences may cover one or more of the following: animal behaviour and pathology; ecology; environmental studies; evolutionary biology; marine biology; natural history; palaeobiology; systematics; tropical biology. For application forms write to: Office of Fellowships and Grants, Smithsonian Institution, Suite 7300, 955 L'Enfant Plaza, Washington. DC. 20560. USA.

PUBLICATION FOR SALE

The Role of Invertebrates in Conservation and Biological Survey. 121 pp. Published by the W.A.Department of Conservation and Land Management.

This symposium volume, edited by Jon Majer, contains the papers presented at a workshop held at the 18th Scientific Conferenmce of the Australian Entomological Society at Perth in August 1987. It includes 14 papers by 19 authors covering a wide range of issues in invertebrate legislation, survey, conservation and ecology, all based on Australian examples. Copies are available for $8.00 from:

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AUSTRALIAN ENTOMOLOGICAL SOCIETY

22nd AGM and Scientific Conference

Melbourne

14–19 July, 1991

Scientific Sessions

The Impacts of Exotic Insects in Australia
Invited speakers will overview the topics of biological control, agricultural insect pests, and the effect of exotic insects on native flora and insects in terrestrial and freshwater environments. Papers are invited on these or other topics related to exotic insects in Australia.

Insects in Vulnerable Environments in S.E.Australia — With Particular Reference to Alpine and Aquatic Faunas
Invited speakers will address the nature and distribution of these faunas, their vulnerability to environmental changes and their conservation. Contributed papers are invited on alpine or aquatic faunas, or insects in other vulnerable environments.

Genetic Engineering and Biotechnology
Invited speakers will review the theory and application of genetic engineering and biotechnology in entomology. Contributed papers are invited.

Taxonomy Workshops
Workshops will be held to discuss taxonomic methodology and to update taxonomic knowledge of specific groups if there is sufficient interest. Delegates who wish to participate are invited to contact the conference organisers.

Contributed Sessions
Papers will also be accepted on all aspects of Australian Entomology not directly related to the major themes.

Social Events

Welcoming Dinner, Cocktail Party, Annual Dinner, Excursion to Healesville Sanctuary.

Contact: Janet Horne (convenor), Paul Horne, Andrew Henderson, Jim Woodward (biotechnology), Mali Malipatil (taxonomy) at the Plant Research Institute, Swan St, Burnley, 3121, Phone (03) 810 1511, for further information.

Australian Entomological Society

Phil Carne Student Prize 1991

* This award (formally known as the Student Award) is open to students who have not yet gained their Ph.D. by 14 July, 1991.

* Entrants need not be members of the Society.

* Submissions should be in the form of a scientific paper of 5000 words or less, on entomological research.

* Entries will be judged by a panel of senior entomologists appointed by the President of the Society.

* The winner will receive $250 cash and will be invited to present the winning paper at the AES Scientific Conference held in Melbourne from 14-19 July, 1991. The Society will provide free conference registration, accommodation in Melbourne and a return air fare from the winner's home State.

* Please indicate your intention to submit an entry by completing the form overleaf and returning it to the Secretary by 1 April, 1991.

* Three copies of the paper, one and a half or double spaced, should be in the hands of the Secretary at the following address by the end of May, 1991.

Dr Jonathan Majer
School of Biology
Curtin University of Technology
GPO Box U1987
PERTH
WA 6001
FAX (09) 351 2495

Australian Entomological Society

Phil Carne Student Prize 1991

This is to advise that I intend to submit a paper on original entomological research for the Society's Student Award Competition in 1991.

My name is: _____

My postal address is: _____

_____

My paper will deal with (tentative title acceptable):

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_____

I am (or was) a student at (name of institution):

_____

My Supervisor's name is (or was):

_____

My current professional qualifications are:

_____

I will forward 3 copies of my entry to reach you by 31 May, 1991 and acknowledge that no paper can be accepted for judging which is not received by that date.

Signed: _____

Date: _____

Return completed form to:

Dr Jonathan Majer
School of Biology
Curtin University of Technology
GPO Box U1987
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FAX (09) 351 2495

Australian Entomological Society
Research Grants

Call for Applicants

The Executive takes pleasure in calling for applications for the Australian Entomological Society Research Grants to be awarded in 1991.

The scheme is intended to encourage the advancement and dissemination of entomological knowledge, particularly in relation to the Australian fauna. Grants may be given for items such as travel, equipment or technical support.

The grants are primarily for small, short-term projects and will be available only to members of the Society of at least 12 months standing. Groups will be eligible provided that the primary researcher is a member. Total funds available will be in the order of $4000.

A report to the Executive in a form suitable for publication in ***Myrmecia*** will be required by the end of 1992.

The application should clearly state:

* the aim of the project
* the expected duration of the project
* a detailed budget, and
* your contact address and telephone number

You may also supply the names of one or two referees if you wish.

The President will appoint a selection panel to allocate and administer the grants. Applications may be for any amount up to $4000, but remember that small, short-term projects which enable a diverse range of work to be funded will be favoured. Successful applicants for 1991 will be advised in June.

Five copies of your application should reach the Secretary at the following address no later than 30 April, 1991

Dr Jonathan Majer
School of Biology
Curtin University of Technology
PO Box U1987
PERTH
WA 6001
FAX (09) 351 2495

Biological Illustration Competition 1991

The Society invites entries to this competition in the form of taxonomic illustrations of insects. Anyone other than a person employed as a biological illustrator or entomologist may enter up to three (3) examples of their original work. Published illustrations will not be accepted.

Entries must be either a black and white or coloured whole body views of an insect (preferably identified) using any medium or technique, but suitable for reproduction after reduction by 50 per cent. The mounted illustrations should not exceed 21 x 30 cm (approx. A4). The winning black and white entries will be displayed at the Society's 22nd AGM and Conference in July 1991.

Entries (carefully packaged if posted) must be in the hands of the Secretary by the end of April 1991. Entrants will be advised of the outcome of the competition by mid-June and original artwork will be returned to the entrants by the end of July.

A condition of entry is that the Society shall have the right to display selected works in public as outlined above and to reproduce the illustrations with appropriate acknowledgement on items such as greeting cards which it sells.

Prizes for both black/white and colour:
1st prize $300
2nd prize $100

NAME _____

ADDRESS _____

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scientific name of insect (if known)

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Send this form with you entries to:
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Australian Entomological Society Inc.

NOMINATION FOR MEMBERSHIP

We, the undersigned

Proposer _____ Seconder _____

being financial members of the Society, propose:

(Dr/Mr/Mrs/Miss/Ms) _____

(BLOCK LETTERS)

Address _____

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Degrees/diplomas etc. _____

Occupation/position _____

Brief list of interests, experience and entomological publications (if any): _____

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I accept nomination and undertake if elected to abide by the rules of the Society, and to pay annual subscriptions by the due date.

Signature _____ Date _____

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